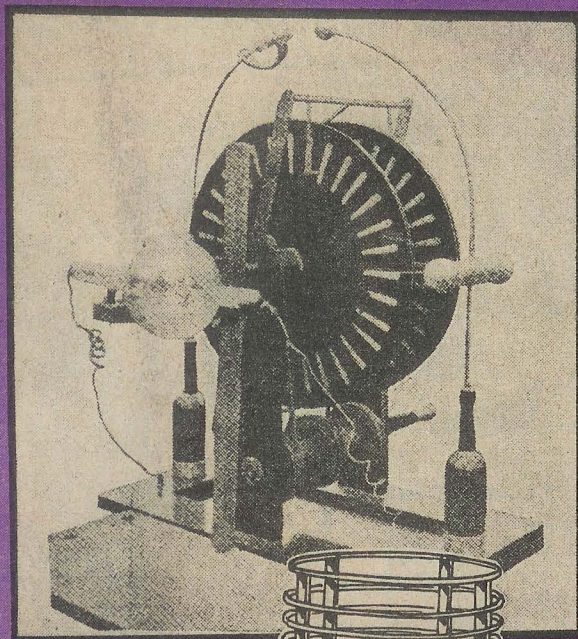


Lindsay's

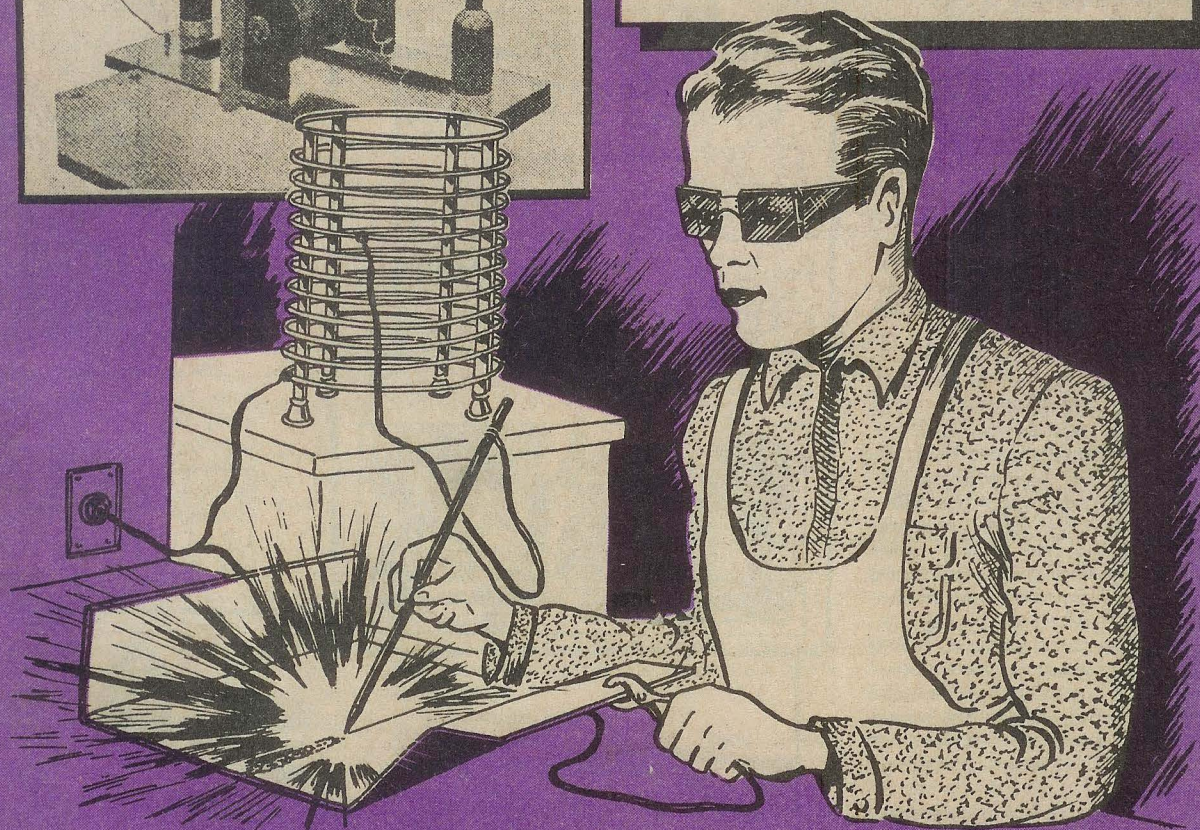
No. 505 — Winter 1990 — \$1.00

ELECTRICAL BOOKS



Don't Miss...

222 Radio Circuits	3
Shortwave Library 1-10 ...	8,9
Wimshurst Machine	16
Letter from Cass Tubbs	29
Neon Signs	31



Unusual, high quality electrical & electronics books from the past & present...

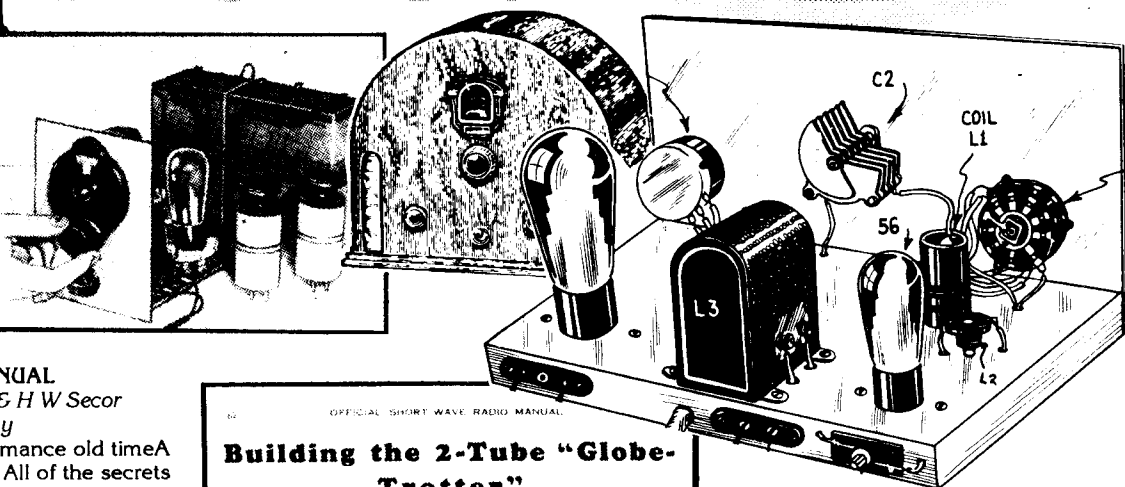
LINDSAY PUBLICATIONS INC

PO Box 12, Bradley IL 60915-0012 • 815/468-3668

Official 1934

SHORTWAVE Radio Manual

Build Simple
High Performance
Shortwave
Radios!



Official 1934

SHORT WAVE RADIO MANUAL

edited by Hugo Gernsback & H W Secor
new chapter by T. J. Lindsay

Build simple, high-performance old time shortwave radios! You can. All of the secrets are here: the circuit diagrams, parts layout, coil specifications, construction details, operation hints, and much more.

Back in the 20's and 30's the only low-cost way of listening in on the newly discovered and fascinating shortwave radio frequencies was to build a set. Shortwave construction magazines flourished, even during the depression.

This is a compilation of construction articles from "Short Wave Craft" magazine. It's wall-to-wall how-to.

At the rear of the book are circuit diagrams, photographs, and design secrets of all shortwave receivers being manufactured in 1934 including some of the most famous: SW-58, the SW-5 "Thrill Box", the deForest KR-1, the Hammurand "Comet Pro", and many more.

You'll find that all the circuits use tubes since transistors hadn't yet been invented. And you'll also find that the original tubes listed are usually difficult to find today, using junk box parts, one of my wife's hair curlers and alligator clips. When I hooked it up to an antenna strung across the basement ceiling and attached a 9 volt battery, signals started popping in like crazy. In a couple of minutes I heard an urgent message from a ship's captain off Seattle asking for a navigator to help him through shallow water. Not bad, considering I live near Chicago!

These small regenerative receivers are extremely simple, but do they ever perform! I've built dozens of them, and they never fail to amaze me! Even master machinist, Dave Gingery has built these sets.

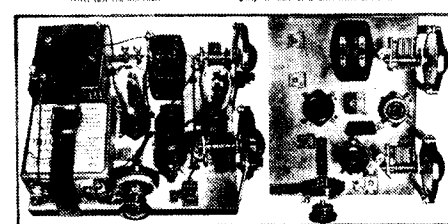
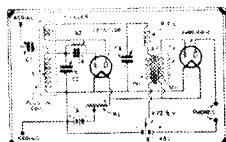
This is the nuts for the experimenter, the survivalist who is concerned about basic communication, shortwave listeners, ham radio operators who collect old receivers, and just about anyone interested in old-time radio.

Building the 2-Tube "Globe-Trotter"

The new, Had to Be Done, The 2-Tube "Globe-Trotter" is complete, as described, for Station Operators. For Listeners, it's a complete, as described, for Station Operators.

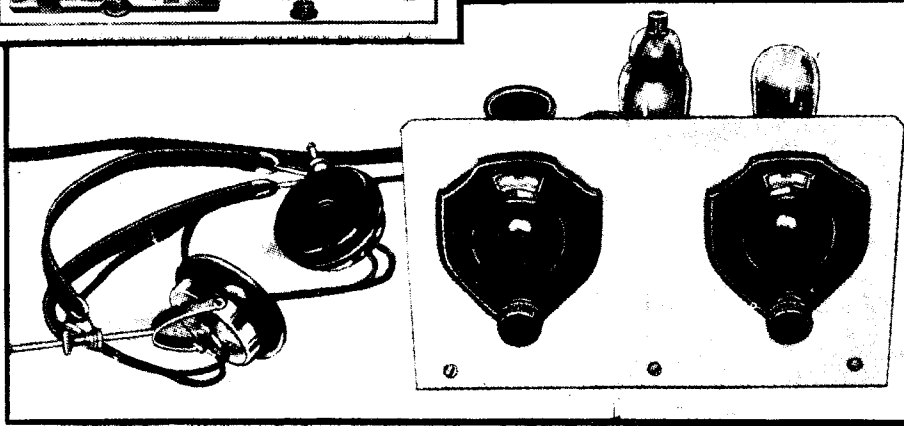
By ROBERT HERTZBERG, W2DJJ

• This is the first of a series of articles in this magazine, which will be published in the near future. The first article in the series is the "Globe-Trotter" which is a complete, as described, for Station Operators. The second article in the series is the "Globe-Trotter" which is a complete, as described, for Station Operators. The third article in the series is the "Globe-Trotter" which is a complete, as described, for Station Operators.



Great
old-time
circuits
revealed!

Great book. Best old-time radio book I've ever seen. And I look at every one I can get my hands on. Consider it carefully. Even if you never build one of these radios, you'll get hours of enjoyable reading out of this book. Top rate. Order a copy. 8 1/2 x 11 paperback 260 pages Cat. no. 4643 \$14.95

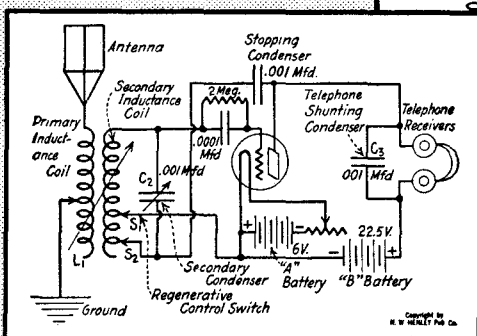
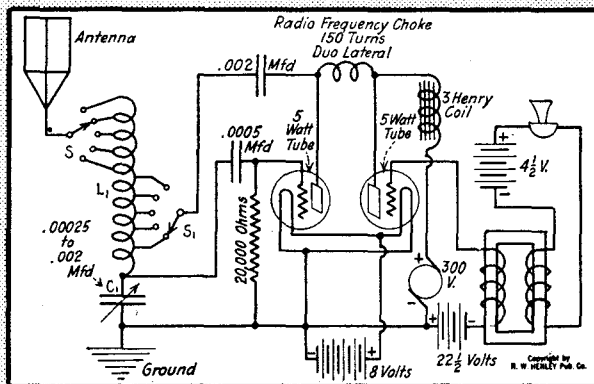


HENLEY'S 222 RADIO CIRCUIT DESIGNS

*Incredible
collection
of radio
plans from
1924!*

NEW!

Available on
or about
January 15, 1990
Orders Taken
in Advance



HENLEY'S 222 RADIO CIRCUIT DESIGNS by Anderson, Mills, & Lewis

Wow! If you're into building old time radio circuits or just reliving those old days, you **MUST** have this incredible book of schematics from 1924!

The subtitle reads: "A comprehensive and up-to-date collection of modern receiving and transmitting circuits with complete design data showing the electrical values of inductances, capacities and resistances with the name of each element on the diagram of the circuit. Each circuit has actually been tested and can be successfully built and operated when directions are followed. Includes explanations of wave length, frequency, tuning, antenna construction, fundamental coupling schemes, and tells how to select manufactured parts, fire underwriters regulations, list of all symbols used, glossary of technical terms, list of broadcasting stations, and a table showing the characteristics of available vacuum tubes."

You get loads of circuits on all kinds of equipment. For instance chapter six presents 25 different schematics for the basic crystal set using every conceivable type of loading and tuning arrangement.

Chapter seven launches the reader into vacuum tube detectors some with even more incredible tuning arrangements. You'll find a variety of regenerative receivers, and even a crystal receiver with an RF amplifier!

After chapter eight on audio amplifiers comes chapter nine on miscellaneous circuits which include

- ultra-audio receiver
- Reinartz tuner with RF, detection and audio
- one tube reflex with crystal detector
- three tube reflex with RF transformers
- inverse reflex
- CW receiver with BFO
- three tube neutrodyne
- counter EMF circuits
- Cockaday receiver
- Bishop super-regenerative receiver
- many others

The final section of circuit diagrams reveals designs for spark, CW, modulated CW and AM

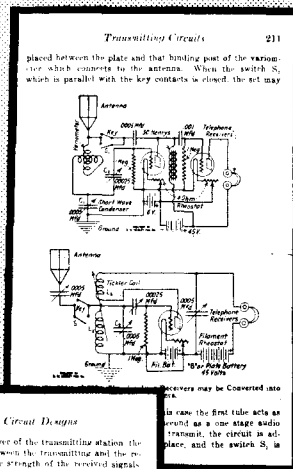
transmitters. Transmit from your car, through power lines, or from aerials!

If you love to look at old circuit diagrams and relive the days of radio when sets were simple and components hot and heavy, then this book is for you. You won't find any 1/4 watt resistors, DIP IC's, or LED's. You have better be looking for iron core audio transformers, carbon microphones, and UV203's!

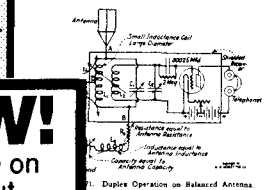
Absolutely great book! Great fun! A must have! Order a copy. You'll like it. 5 1/2 x 8 1/2 paperback 271 pages

Cat. no. 20323

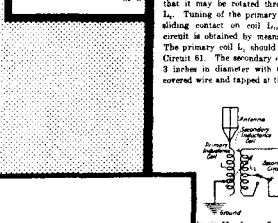
\$11.95



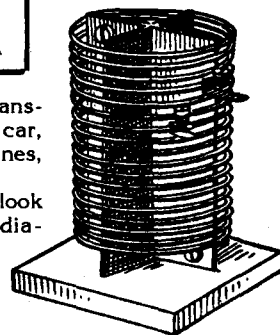
222 Radio Circuit Designs
...depends on the power of the transmitting station the wave length separation between the transmitting and the receiving stations, and on the strength of the received signal. This separation makes it unnecessary to modify the ordinary receiving apparatus for break in or even for simultaneous transmitting and receiving. Figure 270 illustrates a waving and receiving station adapted to duplex operation. Circuit 271 shows a method of transmitting and receiving



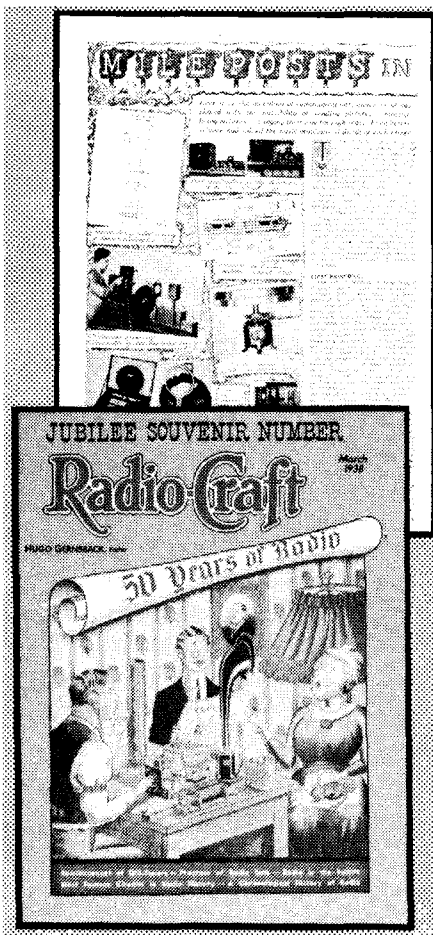
222 Radio Circuit Designs
...without raising any interference between transmitting and receiving. The output of a low power circuit is improved on the antenna between the middle point of the antenna inductance and the antenna ground. The output of a low power circuit is improved on the antenna between the middle point of the antenna inductance and the antenna ground. The output of a low power circuit is improved on the antenna between the middle point of the antenna inductance and the antenna ground.



222 Radio Circuit Designs
...illustrates a convenient modification of Circuit 63. The two-point dial switch is the movable arm of which is connected to the antenna and ground terminals. The stationary coil is divided into 100 sections and 100 turns. Each of the points of use of the dial switch is connected to each of the 100 sections and each point of the dial switch is connected to each of the 100 sections. It is possible to include in the antenna-ground line a number of turns between 1 and 100. In either two switches take the place of the primitive sliding switch of Circuit 63. The circuits are practically the same except for the switch.



Amazing "Radio Craft" Magazine from 1938



RADIO CRAFT MAGAZINE March 1938 edited by Hugo Gernsback

Radio got its start in the 1920's, but it wasn't until the 30's that it made it to the big time. By the late 30's "Radio-Craft" was one of many magazines entertaining and educating radio builders and enthusiasts.

In March 1938 the magazine published a special heavily illustrated edition on radio's first 50 years. And now you can have a complete reprint of that dynamite issue.

Articles include progress of radio receivers, reminiscences of old-timers, story of amateur radio, radio parts of yesteryear, mileposts in television, Fleming's valve, old-time radio stations, new tubes for '37-'38, super-regeneration in 1922, when the neodyne made its bow, early tube experiments and much, much more.

You get every fascinating article, advertisement and how-to construction tip. Great reading for anyone with even a slight interest in oldtime radio. Excellent book. Fun reading. Order a copy! 8 1/2 x 11 paperback 144 pp. Cat. no. 353 \$14.95

1928 Radio Trouble-Shooting

1928 Radio
Trouble-Shooting
by Enno R. Haan
reprinted by Lindsay
Publications

"A Complete and Practical Work on Radio-Receiver Troubles and How to Cure Them".

That description might sound somewhat bland, even dull, but this book is anything but that. When you open the covers of Radio Trouble-Shooting, you'll discover beautiful illustrations, dozens of schematics, many charts and diagrams detailing radio technology not seen in decades.

Chapters include tools and instruments, uncontrollable troubles and interference, antenna-circuit troubles, batteries and chargers, battery eliminators and their troubles, tube troubles and their remedies, internal disorders in radio receivers, reproducer troubles and maintenance.

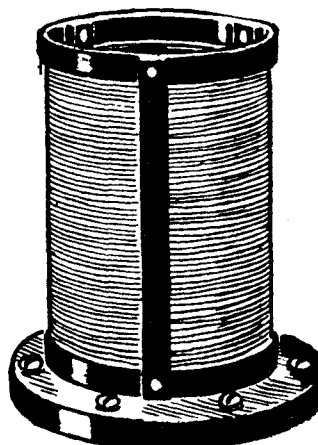
In 1928 radios were generally battery powered, the tube plates usually being connected to several 45 volt B+ batteries, with the family automobile battery powering the tube filaments. It was a real hassle hauling the car battery into the house everytime you wanted to listen to the radio, and 45 volt B batteries were quite a drain on the wallet. It's not surprising that everyone wanted a battery eliminator that could convert 110 volt AC into radio DC voltages. It's not surprising that numerous pages are devoted to batteries and eliminators, their care and repair.

You'll learn how to erect large outdoor antennas and connect smaller indoor loop antennas. Discover how to test tubes and reactivate them. And you'll even find an incredible characteristic chart of rarely seen battery and AC tubes such as the Daven MU-6, the Schikerling MU-20, the DeForest DV-7, the Western Electric 205D and many others.

To cure internal disorders you'll have to know how to troubleshoot the tuning circuit, analyze grid circuit and plate circuit troubles, control regenerative reradiation, how to neutralize a neodyne, and even troubleshoot the state-of-the-art superheterodyne.

The chapter on reproducers seems quaint today. You'll learn how to care for headphones, how to eliminate B+ voltages from the loud-speaker circuit, and more. And we're about talking horn speakers and old-time earphones.

This is fun reading with great illustrations



R.F. COIL OR
TRANSFORMER

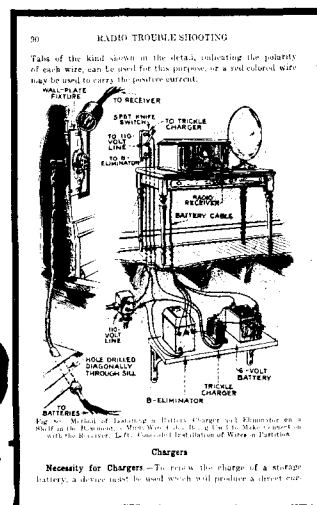
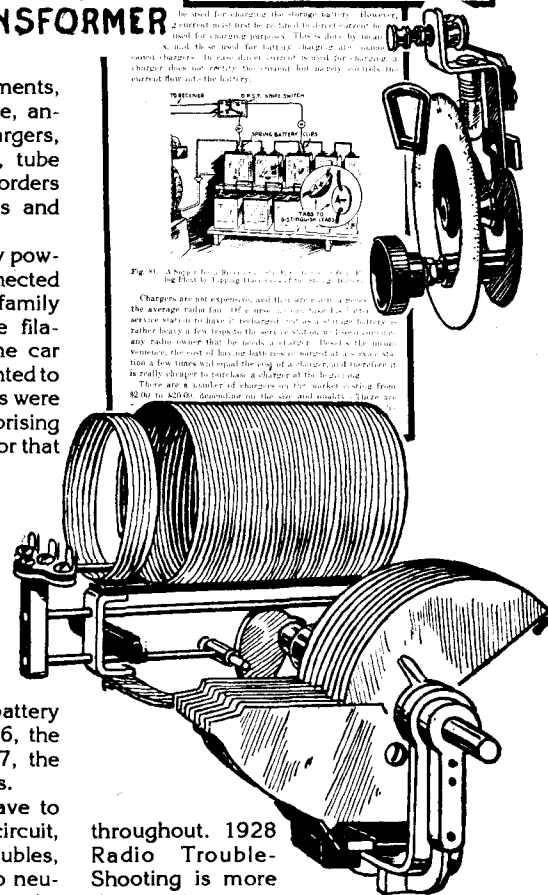


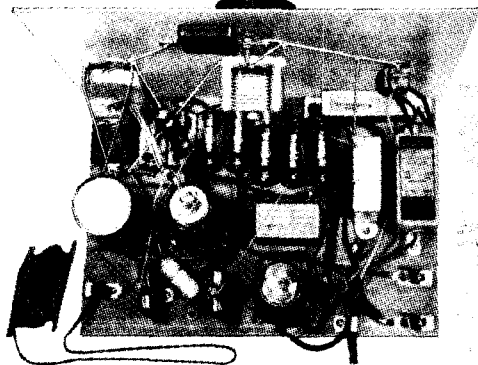
Fig. 50. Method of connecting a Battery Charger and Eliminator in a Radio Receiver. When the Battery Charger is connected to the Receiver, the Battery Charger will produce a direct current. The Battery Charger will produce a direct current. The Battery Charger will produce a direct current.



throughout. 1928 Radio Trouble-Shooting is more than just a repairman's textbook, it's a snapshot of early radio technology at a time when shortwaves were making radio exciting for everyone. Get in on the fun. Order a copy. This is an excellent early radio book worth having. 5 1/2 x 8 1/2 paperback 328 pages Cat. no. 20102 \$14.95

Radio for the Millions

Great World War II Era Magazine Articles



RADIO FOR THE MILLIONS by Popular Science Monthly reprinted by Lindsay Publications

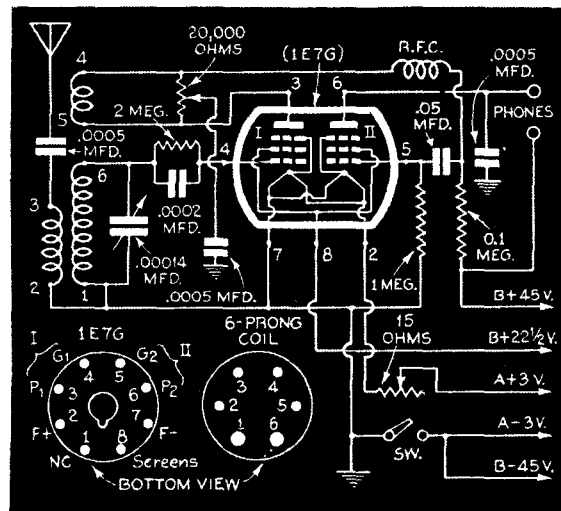
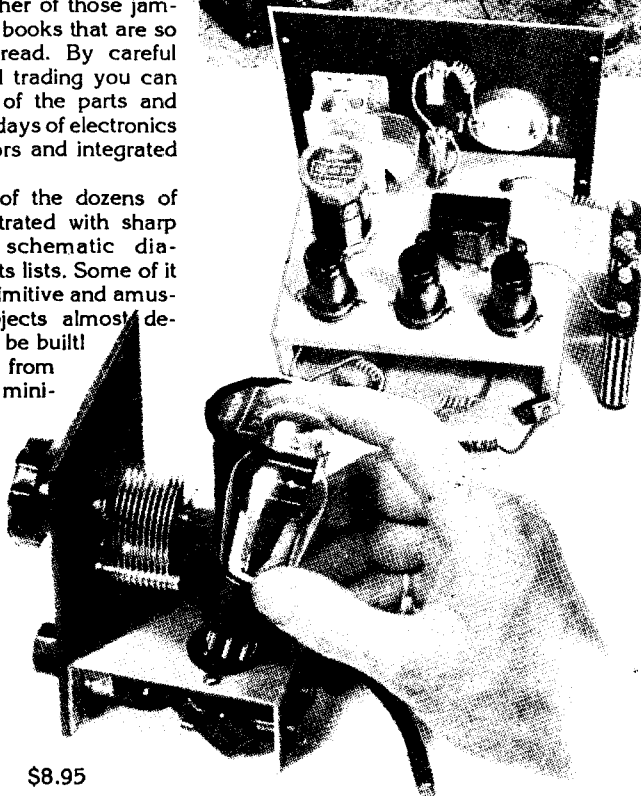
From the pages of World War II vintage issues of Popular Science Magazine came this reprint of well illustrated electronics articles on everything from phonographs and shortwave radios to cabinet design and radio servicing.

This is another of those jam-packed project books that are so much fun to read. By careful scrounging and trading you can still get many of the parts and relive the early days of electronics before transistors and integrated circuits.

Every one of the dozens of articles is illustrated with sharp photographs, schematic diagrams, and parts lists. Some of it seems really primitive and amusing. Other projects almost demand that they be built!

Great stuff from the days before miniature vacuum tubes. Endless enjoyable reading, especially if you remember reading this stuff as a kid. Get a copy of this. You'll really like it. 6x9 paperback 192 pages

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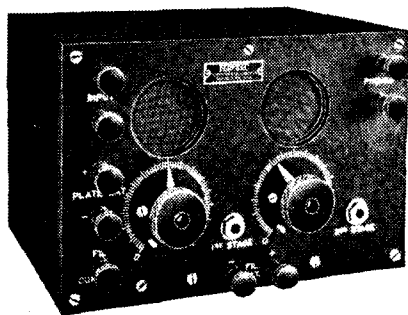


Great Illustrated Articles!

One-Control Beginner's Radio; Get Started in Radio; Three-Tube TRF Receiver; One-Tube Loudspeaker Set; Four-Tube Speaker Receiver; Four Dollars Builds This Set; More Power for Your Two-Tube Radio; Homemade "Audio" Telegraph; Three-Tube Phonograph Receiver; Four-Tube TRF Receiver; Inexpensive Dual-Turntable Phonograph; Kitchen Radio; Two-Tube Set Gets Foreign Stations; Two-Way Radio Station; Combination Receiver and Amplifier; "Letter" Radio Can Be Mailed; Build an FM Receiver for \$22; A Tuner for Any Broadcast Set; World's Smallest PA Units; Twin-Bed Radio; Floor-Lamp Radio; Practice Code Sender and Receiver; Pocket Receiver for Sports; Tiny Portable Operates Anywhere; Low-Cost Power Supply; Three-Tube Superhet; Compact All-Wave Set; Two-Tube AC-DC Receiver; Portable Radio-Phonograph; One-Tube Shortwave Set; Sliding Panel Tunes Novel Receiver; All-Wave Bands on Two Tubes; Compact Radio-Tube Tester; Europe on One Tube; Bicycle Radio; "B" Supply for Portables; Priority Receiver Uses New Tuning; Compact Rectifier Unit; Midget Broadcast Set; Week-ender's Radio; Midge AC-DC Receiver; Book-End Radio for Your Den; One-Tube All-Electric Set; Superhet for Beginners; Pocket-Size Radio Tester; "Wireless" Radio Phonograph; Low-Cost Home Recorder; Tom Thumb Radio; Suitcase Phonograph; Two-Tube Portable; Library-Table Radio; All-Purpose Portable; One-Tube Receiver; High-Fidelity Amplifier; Small Radio with 400-Mile Range; Dressing-Table Radio; Unit Kills Fading; All-Wave Amateur's Receiver; Camper's Radio; Television Antenna; Universal Power Supply; Tiny Radio Uses Two Detectors; Portable AC-DC Signal Tester; Book-Light Radio; Around-the-World Receiver; Two-Tube Radio Phonograph; Cabinet Ideas; Cane-and-Seat Radio; Vacation Portable; Bed Radio; Suppressor Reduces Static; Emergency Receiver; Light-Beam Transmitter; Blackout Receiver; Vest-Pocket REceiver; Football-Fan's Radio; Pocket-Notebook Radio; Novel Lamp Radio; Pilot Lights, Rectifier Tube, Squealing, Paper Tubular Condenser; Various Causes of Humming; Bring Your Radio Up to Date; REception, Volume Control, Dead Speaker, Connecting a Pickup; How to Build a Loop Antenna; Line-Cord Breaks, Dial Pointers, Fuzzy Operation, Ballast Tubes; Fixed Condensers, Reception, Fade Out, Humming; How to Refinish Your Radio Cabinet; Faulty Heater, Extending Reception, Noisy Condenser, Midget Circuit; Neon Condenser Tester, Defective Resistors, Pilot Light, Fading Reception; Battery Testing, Loop Antenna, Substitute Batteries, Loose Batteries; How to Correct Dial Troubles

Radio of the 1920's!

Incredible collection of ads, photographs, magazine articles!



RADIO MANUFACTURERS OF THE 1920's

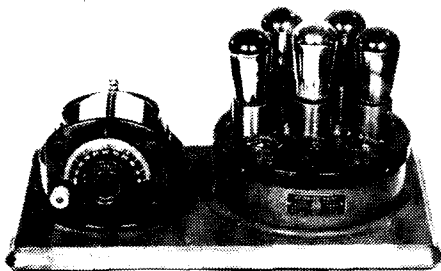
by Alan Douglas

If you love old radio equipment like I do, you'll really enjoy this. This, the first of several volumes, covers apparatus manufactured by A-C Dayton through J. B. Ferguson.



You get a big book of wall-to-wall illustrations of home console radios, crystal sets, regenerative sets sold to receive messages from MacMillian's North Pole expedition in 1925, ads for parts, magazine articles taking you inside radio factories and much more.

This is nostalgia, rather than how-to. But! If you're building old circuits, doing restorations, or just want to build a radio that looks old, you'll find more ideas than you can ever use. You'll like this "time



machine" back to the 1920's when radio was taking off.

As an old radio buff, I wish I had published this. I think you'll like it, too. 8 1/2 x 11 paperback 225 pages
Cat. no. 356

\$19.95

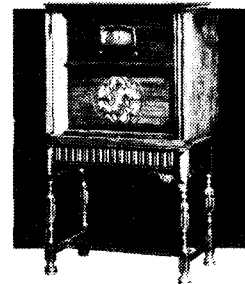
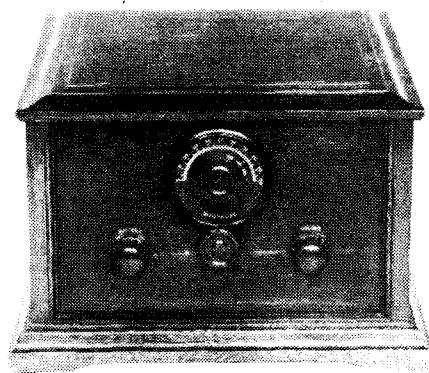
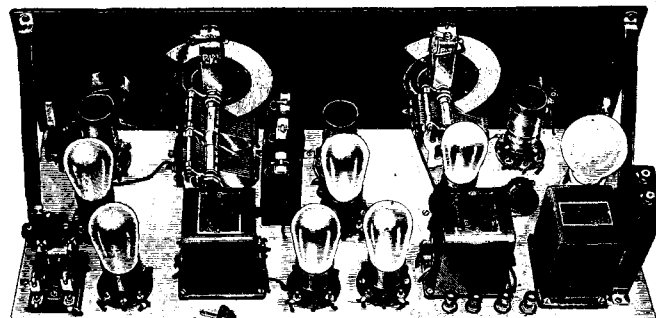
Radio of the 1920's

Vol. 2

RADIO MANUFACTURERS OF THE 1920'S Vol 2

by Alan Douglas

More of the same great material found in Volume 1! You'll find ads, technical diagrams, factory photos, and history on radios produced by 31 different manufacturers listed alphabetically from Freed-Eisemann through Priess. Manufacturers A through E can be found in volume one. You get wall-to-wall illustrations in this large 266 page book that are



guaranteed to keep you drooling for hours. Educational, inspirational (if you build old radios), and just plain fun! Get a copy! 8 1/2 x 11 paperback 266 pages
Cat. no. 368

\$22.95

I finally heard my first station... KDKA!

Mr. Lindsay:

I received your Fall 1988 catalog, #501, in November. I found it most interesting, to say the least. Particularly the radio tuner shown on the cover. This was typical of the equipment available in the early days of "wireless" as it was called.

This tuner and various parts for building radio receivers was available through the Electro Importing Co., A Hugo Gernsback enterprise.

As you might surmise, I got started in radio at an early age. I read everything on radio I could get my hands on, including the Electrical Experimenter.

I wound coils on Quaker Oats boxes. I strung up antenna wire. I twiddled cat whiskers on galena crystals and all I got for my trouble was a headache from listening to static. We lived in Birmingham Alabama during and shortly after WWI and there were no broadcast stations within hundred of miles.

Toward my 14th birthday, my dad let me select part from a Wm B duck catalog (Toledo,

Ohio—I think) to build a one tube receiver, with the parts I selected, (a vario-coupler, 2 variometers and a tube), I already had Murdock headphones, I finally heard my first station. I heard KDKA, Pittsburgh, in their early day when they were only on the air three evenings a week. Radio was such a rarity even strangers had heard about me came to our house and asked to listen.

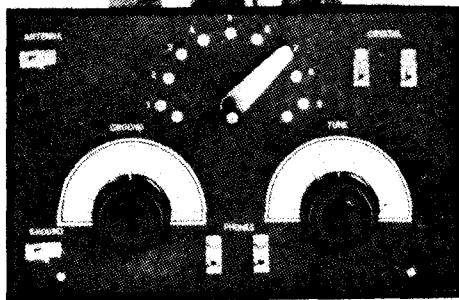
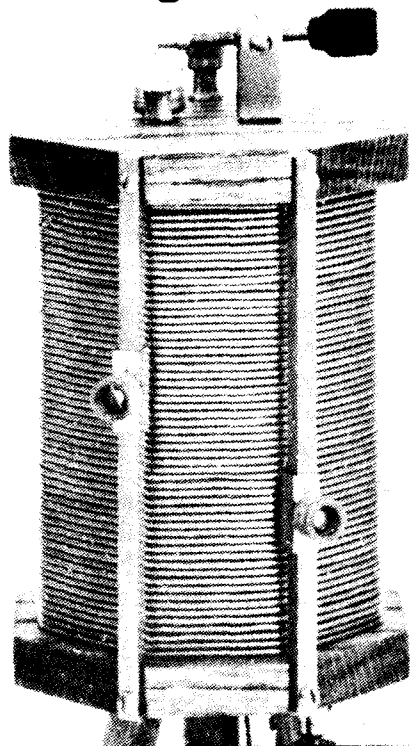
The tube I used would be a rare antique today. It looked like it had been made from a test tube. It was about three quarters of an inch in diameter and about four inches long. It had no base, just lead wires coming out each end. It had a tapped filament, so that by using one half at a time in effect you had a second filament to use when the first half burned out.

It was very "soft". It didn't take much B voltage to cause ionization. But it worked, and eventually I logged many out of state stations...

Sincerely,
A.M. Reager

RADIOS THAT WORK FOR FREE!

*Build a High
Performance
Crystal Set!*



RADIOS THAT WORK FOR FREE

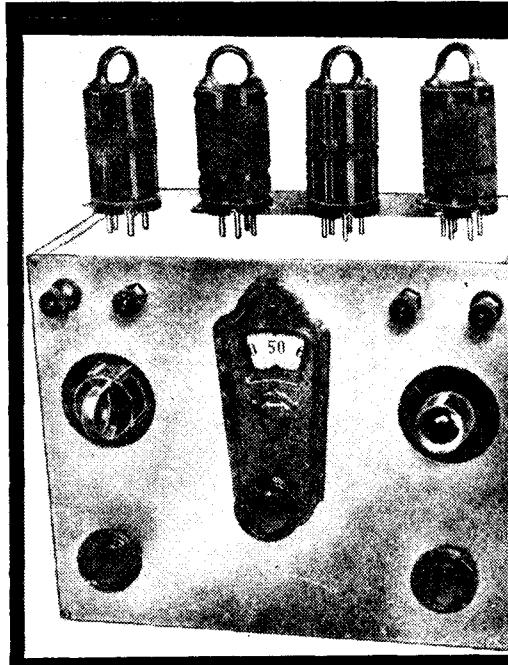
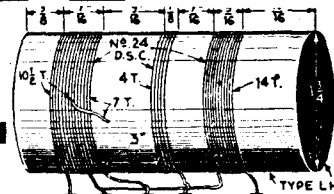
by K.E. Edwards

Build yourself a crystal set! You'll be shown everything you need to know - from materials to tools to techniques. Edwards will show you how to build "hot-rod" crystal sets with fancy features that can outperform the old oatmeal box versions, but are still simple. If you've never built anything electronic at any time but would like to try, this is a great place to start. This book has become a classic in its field, and it gives me a good feeling. I think you'll like it, too. 5 1/2 x 8 1/2 paperback 138 pages — well illustrated

Cat. No. 314

\$7.95

How To Build & Operate SHORTWAVE RECEIVERS



How to Build & Operate Short Wave Receivers

by Short Wave Craft Magazine
reprinted by Lindsay Publications

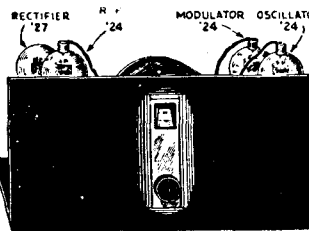
"Including Receivers for Beginners, Short Wave Converters, S-W Superheterodynes, Super-Regenerators, Television Receivers"

In his preface publisher Hugo Gernsback wrote, "The present volume is a combination of a great deal of the best constructional, Short Wave material that has come out during the past year. All of the circuits have been brought up to date, and there will be found here much that is new for the experimenter in short waves."

We have carefully sought to keep the contents up to the title of the book, and you will find that it is 100% 'How to Make and Operate.'

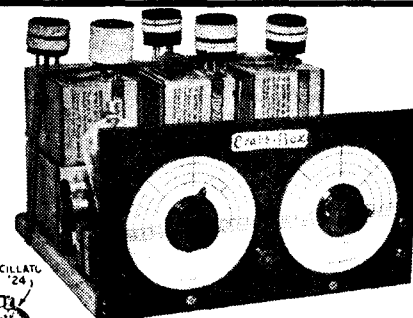
And it sure is. Jam packed in this fascinating little book are the best articles from back issues of Short Wave Craft magazine. We call it 1934 because that's the year it was published. Yet the preface and the original copyright carry a 1932 date.

You'll learn how to build bandswitching receivers, high performance multi-tube sets, power audio amplifiers, RF amplifiers, and much more. You'll enjoy the ads for parts, other books, and even experimental television systems using the old Nipkow scanning discs.



CONTENTS

The SWC Two Tube Portable
How to Operate a Shortwave Receiver
Two Volt Two Tube Receiver
A "Plug-Less" SW Receiver
The Short Wave, Screen-Grid Craft Box
Here's That 1-Tube SW Receiver
How to Obtain Smooth Regeneration
SW Receivers
Fine Results with Tapped Coils
A Short Wave "Fun Box"
How to Build Really Efficient SW Converters
One-Coil Super-Het Converter
Short Wave Converter with "B" Supply
SW Reception with Super-Regeneration
Super-Regenerative Receiver
New - Short Wave Superregenerative
"My Favorite" Short Wave Receiver
The "HY7B" Super-Het
The "Egert" SWS-9 Super-Het
A Super-Sensitive Short Wave Receiver
Combination Long and Short Waver
Adding 2 Stages RF to Hammarlund Receiver
Short Wave Tuning, Less Plug-In Coils
The "Ham's Own" Receiver
The Superior Short Waver Receiver Used at "G2DT"
How to Build a Good Television Receiver
My Favorite Audio Amplifier
An SW Power Amplifier
Time Zone Chart
How to Gain Detector Sensitivity
How to Use RF Chokes
Practical Hints on Reception
Adding Untuned Stage to SW Converter
A "Separate" Regeneration Tube
Coil and Condenser Data

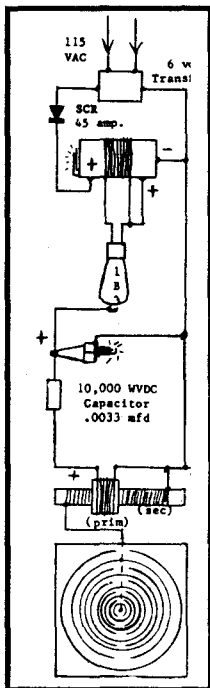


Even if you never attempt to build any of this equipment, you'll still find this enjoyable reading. This is one of those low cost booklets advertised in the back of the early radio magazines that were published by the thousands but have now practically disappeared. You get all 72 original pages.

Interesting little publication. One of those booklets I read cover to cover a hundred times as a kid. I never thought I'd get my hands on another copy. You'll like it. Order a copy. 8 1/2 x 11 paperback 72 pages well illustrated
Cat. no. 20129

\$7.95

Lakhovsky Multi-Wave Oscillator!



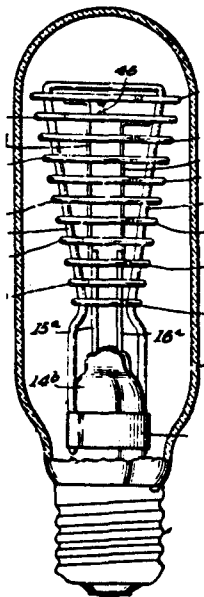
LAKHOVSKY MULTIPLE WAVE OSCILLATOR HANDBOOK compiled by Thomas J Brown

Supposedly sometime before World War II, Russian experimenter Lakhovsky asked Nikola Tesla to help him design a high voltage generator that could produce electrical energy at many different frequencies simultaneously. A model of the machine was tested by physicians of the time who found that it not only had a 98% cure rate for terminal cancer, arthritis, and other "hopeless" diseases, but that it could rejuvenate plants and animals as well.

No doubt the oscillator works and is an interesting piece of equipment, but I wouldn't stake my health or anyone else's on it. Quack medicine machines were everywhere in the 1920's & 30's. This could well be another.

In this typewritten report you get historical details, wiring diagrams, construction tips, articles on waves that heal, "documented" cases of cure, reprints of the Lakhovsky patents, and a series of reprinted magazine articles on the use of radio frequency waves to cure disease.

Modern physicians have found that electrical fields can speed healing of wounds in some instances. Perhaps this material has some merit, or perhaps it's all a hoax. Maybe it's another suppressed invention. You figure it out. You'll find it interesting reading — a very unusual collection of material. Get a copy. 8 1/2 x 11 spiral bound 156 pages
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levitation, simple motors, lamp dimmer, and more.
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Part one covers receiving antennas with notes on tuned antennas, broadcast antennas, low impedance transmission line, doublets for shortwave, transposed leadin, a SW antenna tuner, antenna construction, a double-doublet all-wave antenna, doublet installations and more. Part II covers transmitting antennas for amateur stations including the half-wave antenna, output matching circuits, construction, the Zepp, a counterpoise system, and more.
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Gernsback's Educational Library reprinted by Lindsay Publications

In the late 1930's Hugo Gernsback's Radio Publications company in New York published a series of ten shortwave radio booklets to satisfy the public's growing interest in building and operating shortwave sets.

Each booklet is 32 pages in length, is well illustrated, and has a brilliant yellow cover. Each covers a different topic from radio construction to electrical experiments to television.

You'll find these little booklets fascinating reading, full of ideas, and you'll find each to be a slice of early radio history back when radios were built on breadboards with handtools instead of printed circuits.

The original booklets were printed during the Great Depression on inferior quality paper and are now quite rare. But you can get high quality copies on quality paper and enjoy them again.

Order a set today!

No. 1 How to Build 4 DOERLE SHORTWAVE SETS

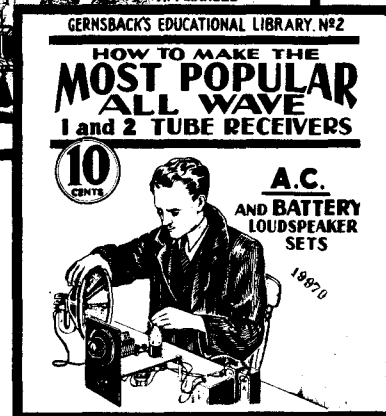
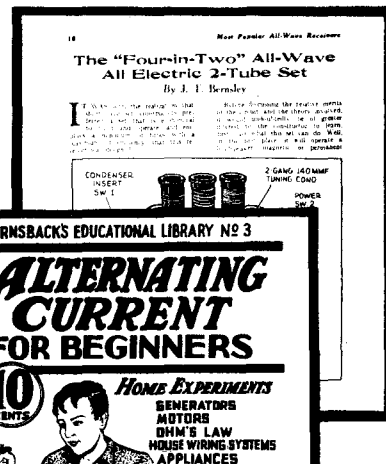
Build the 2-tube 12,500 mil "Doerle" short-wave receiver and the 3-tube signal gripper. You then get instructions on modifying these two basic radios into a bandspread receiver and an 110 VAC operated version.
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Build a Megadyne one-tube loudspeaker set, a beginner's 1 tube AC-DC set, a four-in-two all-wave all electric 2-tube set, a super-regenerative single-tube loudspeaker set, a portable 2-tube battery loudspeaker receiver, and a beginners' one-tube all-wave battery set.
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Study theory, and perform home experiments with AC such as lighting a lamp induction, making a simple electric hom, watch demagnetizer, simple test for motor armature defects, bell-ringing transformer, charging storage batteries from an AC source, simple test for condensers, AC electromagnets, magnetic



No. 5 BEGINNERS' RADIO DICTIONARY
A complete 32 page dictionary for beginners. Obviously, most the terms are still in use, but some are not. Brief definitions and a number of illustrations are provided. Learn about acceptors, counterpoise, ferromagnetic modulation, interrupter, keying flicker, strays, water rheostat and much more.
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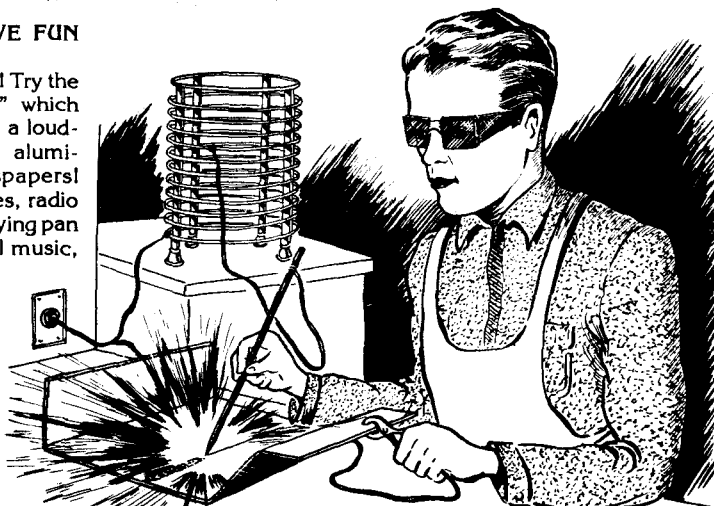
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Unusual experiments! Try the "Talking Newspaper" which is nothing more than a loud-speaker made from aluminum foil and newspapers! Also try talking gloves, radio electric chair (put a frying pan in your pants), visual music, dancing to silent music, musical and talking gadgets, the radio dancer, home broadcasting, the door that talked, and more!

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No. 7 How to READ RADIO DIAGRAMS

Learn how to translate radio diagrams into physical equipment. You get pictures, definitions, and equivalent symbols of radio components. Then you'll see circuit diagrams for a variety of circuits from crystal sets to multi-tube radios as well as the physical layout they represent. Basic information, but essential to radio newcomers in 1938.

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No. 8 RADIO FOR BEGINNERS

Learn about wave analogies, principles of transmitting, and receiving principles. A lengthy section on receiving instruments will show you how tank circuits tune to particular wavelengths and how tubes and other components perform their jobs. You also get a section

net, on rheostats and how to use them, rectifiers, simple measuring instruments, heat or cold from junction of dissimilar metals, handy wire gauge, musical instruments, and more.

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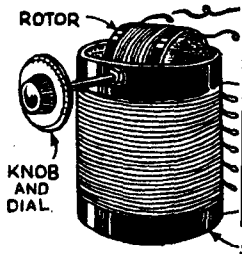
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In 1938 this was high-tech electronics! You get a primer of television, including details on mirror scanning, Scophony system, and movies for television. Study the kinescope or cathode ray tube and how the sweeping beam is synchronized. Learn about receiver antennas, how TV programs are broadcast, network TV, and even a Scophony system for color television! Quite interesting.

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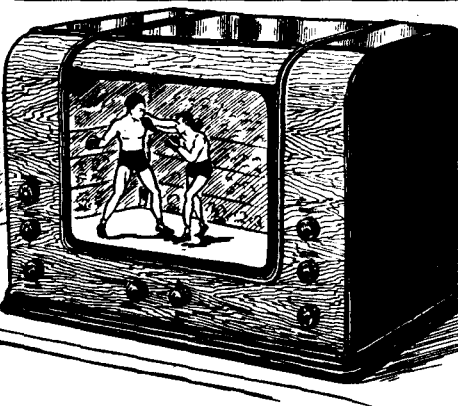
on antennas and aeriels. Another essential booklet for the beginner.

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No. 9 SIMPLE ELECTRICAL EXPERIMENTS

Build a galvanometer, experimental magnet, simple motor, electric shocker, microphone, arc lamp, electric furnace, arc welder, a home-made key, batteryless flashlight and more. Perform tricks with telephone receivers and experiments with lamps, neon lamps, condensers, talking condensers, static electricity, and more. You'll find a brief section on making a mag-



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Unusual Magazine!

An interesting, small, and off-beat radio magazine you should consider is *Electric Radio* published by Barry Wiseman N6CSW/0. In his 5 1/2" x 8 1/2" 36 page magazine you'll find articles on old homebrew shortwave radios, military radio gear, vacuum tube amateur gear, collecting and restoring hints, classifieds, and more. It might be just your thing. The way to find out is to send him \$2.50 and ask for a back issue along with subscription information. Tell him Lindsay sent ya...

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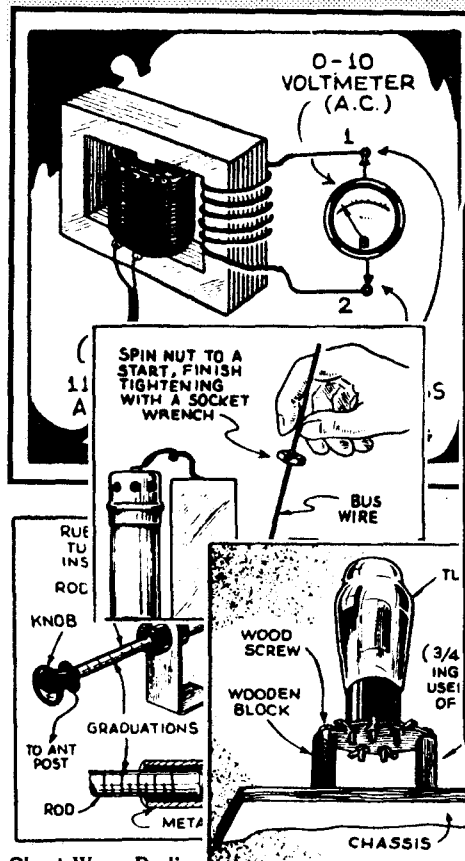
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Short Wave Radio QUIZ BOOK AND KINKS

**Fantastic 1938
Collection of
Hints & Tips**



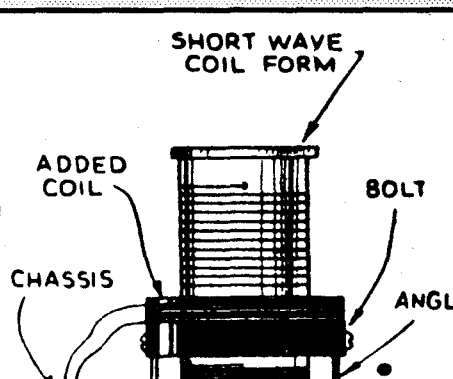
Short Wave Radio QUIZ BOOK AND KINKS

by Short Wave & Television Magazine
reprinted by Lindsay Publications

Short Wave & Television Magazine frequently published reader's questions and answers as well as small "fillers" of circuits, hints, tips and kinks. In 1938 a collection of these tiny articles was reissued in this 64 page book.

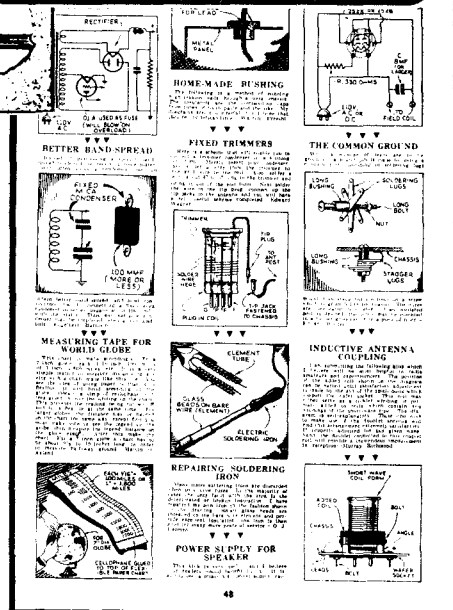
You'll get tips on winding coils, bending chassis, soldering phone tips, making a lightning arrestor from a spark plug, plans for a rf amplifier, a 2 tube SW set, another for a motor-cycle, a 2 tube battery set, a 6.3 volt 3 tuber, and on and on. There are hundreds of hints and kinks here!

You'll wish the stories were longer, but there are so many great ideas (some a little ridiculous) that you won't complain. It's fun reading. I like it, and I think you will, too. Order a copy. 5 1/2 x 8 1/2 paperback 64 pages Cat. no. 4945 \$4.95

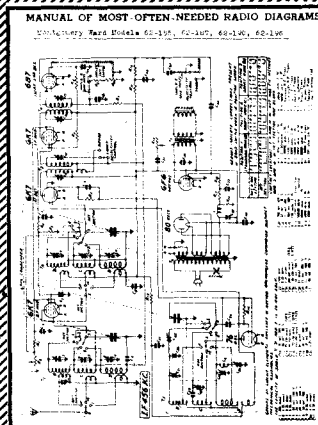


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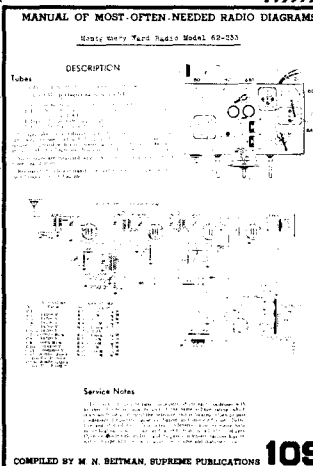
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- AC-DC Receivers
- Battery Type SW Receivers
- Short-Wave Antennas
- Antenna Hints
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- Beat Oscillators
- Power Supplies
- Audio Amplifiers
- A Folded Doublet to Save Space
- How to Get Best DX
- Simple 1-Tube Booster
- A Twin Pentode Receiver for the Beginner
- Kinks for SW "Fan"
- Easy-to-Build Short Wave Transmitters
- Code Practice Oscillators
- 5-Meter Receivers
- "Ham" Kinks



Old Radio Diagrams!



108



109

Most Often Needed 1926-1938 RADIO DIAGRAMS and Servicing Information compiled by M. N. Beitman

Reprinted from out of the past is this great collection of wiring diagrams and service tips on most of the radios likely to be encountered by a radio serviceman in 1938.

You get not only the circuit diagram but in many cases parts numbers, voltage measurements at critical points, chassis drawings, alignment specs for superheterodynes, and more.

You'll find mostly diagrams for superhets, but there are a few regens from the "old days". Many receivers have shortwave bands. And although I consider myself at least somewhat knowledgeable about old radio technology there are tube numbers used here that I've never even heard of!

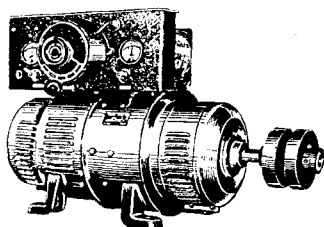
If you collect radios or like to build old sets using old parts, this is for you. You'll find everything from Atwater-Kents to Zenith radios listed. A valuable reference. Good stuff. Consider it carefully. 8 1/2 x 11 paperback 240 pages

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12 Shortwave Receivers from Hammarlund!

Great 1937 Plan Book!

HAMMARLUND SHORT WAVE MANUAL
Third Edition

reprinted by Lindsay Publications Inc

For only ten cents you could by this 32 page booklet and choose which of the twelve different shortwave radios you wanted to build. These were the depression years, and Hammarlund, one of the most reputable manufacturer of radio parts, was eager to sell you what you needed to build a low-cost receiver.

You'll like this! The plans offer interesting detailed text that makes construction easy along with the basic schematic diagram, a parts connection diagram, tube pin layouts, coil charts and lots of photographs. I haven't seen any plans better done than these!

You get—

- A Boy Scout's S.W. Receiver
- ARRL Ham Receiver
- The Argonaut
- The AC-DC 2 Tube S.W. Receiver
- Doerle 2-Tube Receiver
- The Dragnet
- The Gainer
- The Pentaflex
- A Power Pack for S.W. Receivers
- Radio Amateur's Handbook 3-Tube Band Spread AC set
- The Ray Five Meter Set
- The Skyscraper
- A Three Tube S.W. Pentode Receiver

This is great stuff! For instance the "AC-DC 2-Tube SW Receiver" uses two double tubes, a 6F7 as an untuned RF amplifier and a tuned regenerative detector, and a 12A7 as audio amplifier and rectifier. The circuit is surprisingly simple, and yet I'm sure it performs very well!

The "Pentaflex" uses a single 6A7 pentagrid converter tube as a regenerative detector and as an audio amplifier. This could be fun to build.

And the "Ray Five Meter Set" is a three tube super-regenerative set for the then-experimental band of 5 meters (about 60 MHz). Back then a five meter set was a marvel!

And there are nine other circuits plus a battery eliminator project.

This is fun reading and a great source of construction ideas. Get a copy of this. The price is reasonable and the content is super. Order a copy today. You'll enjoy it. 5 1/2 x 8 1/2 booklet 32 pages
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1937 SHORT WAVE MANUAL 25

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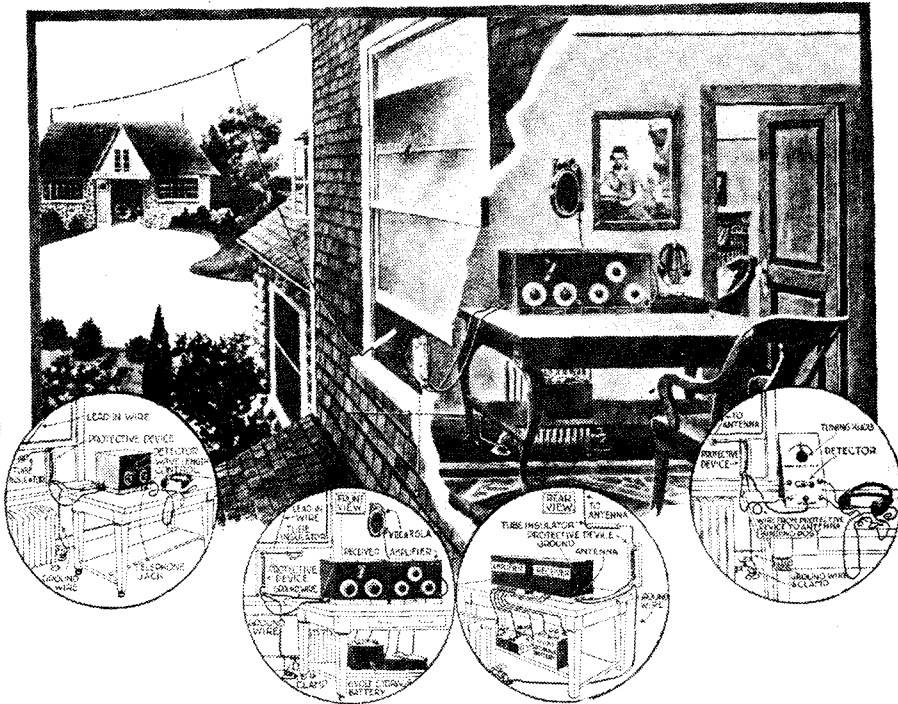
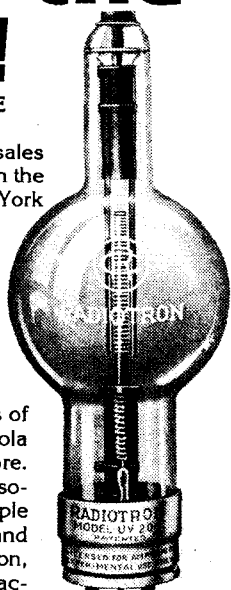
by Radio Corp of America

The World Wide Wireless sales department of RCA located in the Woolworth building in New York City produced this impressive promotional book in 1922 to introduce the public to the new technology of radio broadcasting.

You'll find that part one covers reception: the broadcasting station, classes of receiving apparatus, the Aeriola grand, complete sets and more.

You'll learn about accessories in part two including simple receiving circuits, audio and radio frequency amplification, Radiotron and Aeriotron vacuum tubes, variable condensers, storage batteries, and more.

In part three you'll get the inside scoop on transmission equipment techniques including info on transmission tubes, circuits, Kenotron tubes, transmitting condensers and even amateur equipment.



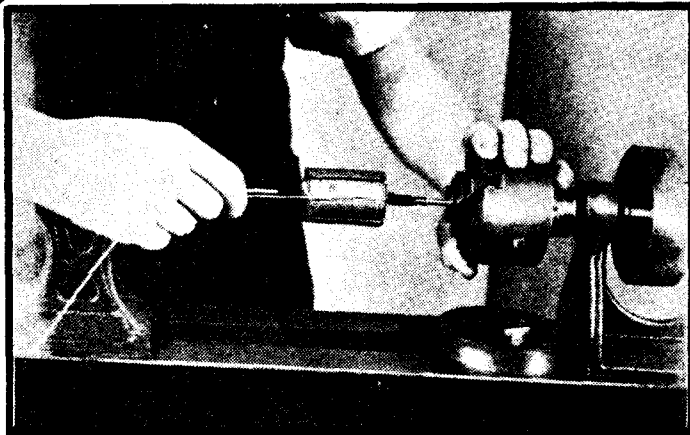
Part four will teach you general information such as what comprises a scientifically constructed amateur station, radio laws and regulations, CW on amateur bands, vacuum tube precautions, technical terms, apparatus price list and more.

Again, you get great educational material.

superb illustrations, and great ideas in this facsimile reprint of the original. If you're into early broadcast and amateur radio, this is something you should add to your reference library. Great reading. Order a copy today! 8 1/2 x 11 paperback 128 pages

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\$12.95



DYNAMO BUILDING FOR AMATEURS

by A. J. Weed

reprinted by Lindsay Publications

"A practical treatise showing the construction and winding of an experimental fifty watt dynamo. Illustrated by sixty-four original engravings showing the actual work in progress."

It's only a fifty-watt dynamo which is not a lot of power, but this book is worth having. Although the author doesn't specify DC output in amps and volts, he does say that when used as a motor, it will generate 1/12hp when connected to a 5 cell battery which would be 11 volts for a lead-acid battery. I would imagine the output of the dynamo would be about 12 volts as just over 4 amps.

Build a Dynamo!

Generate Electricity!

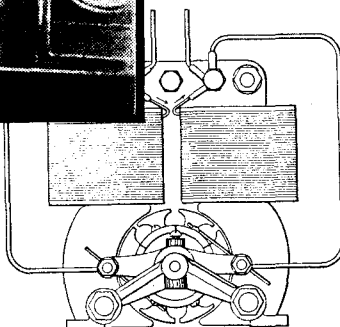
tor and salvage field and armature punchings from it. Electrical steel is easy to get these days.

You can use this book as an intro into building generators and/or motors. You will be shown everything from dimension drawings to winding procedures to turning the commutator in a lathe. Once you've built this, you can jump to larger machines.

This would be a great dynamo to be driven from a small steam engine. Use it to charge a storage battery out in the wilderness. I'm sure you'll have your own unique application. Interesting project. Rare information. By one of the authors of "Gas Engine Construction".

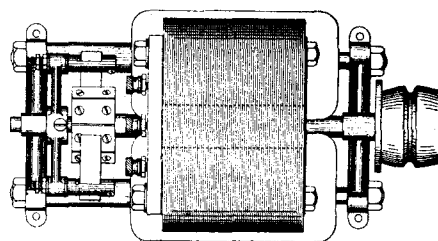
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86 pages photos & drawings
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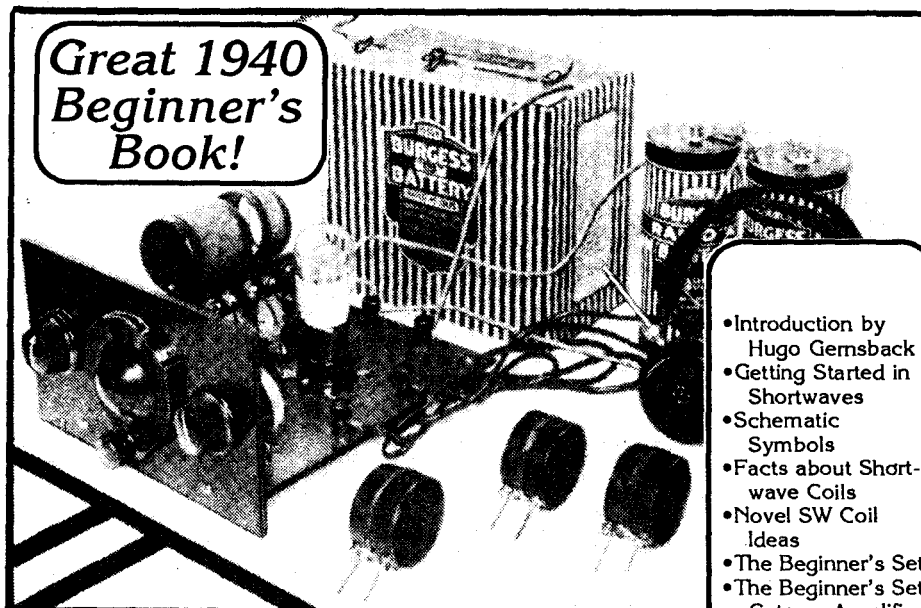


Chapters include: side-bearing rods, field punchings, bearings, commutator, pulley, brush holders, connection board, armature shaft, armature, armature winding, field winding, connecting and starting.

The project is based on field punchings that were available as a kit when the book was released in 1910. I would think that if you're at all creative, you can find an old motor or genera-



**Great 1940
Beginner's
Book!**



Shortwave Beginner's Book

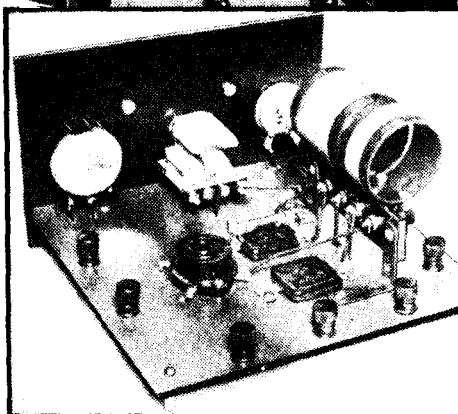
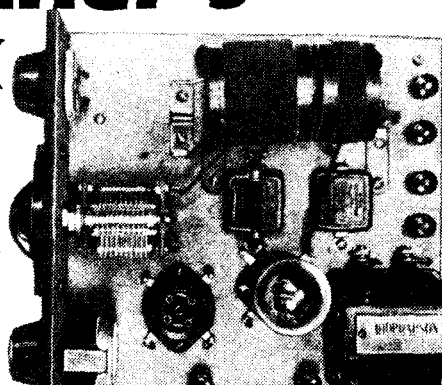
**SHORTWAVE
BEGINNER'S BOOK**
by Radio & Television
Magazine
reprinted by Lindsay
Publications

The full title is "Short Wave Beginner's Book including a complete course of instruction in shortwave; details for making short-wave aeri-als; a complete beginner's set; coil winding data; operating kinks." And it's 36 pages of dynamite ideas from 1940.

Short Wave Beginner's Book was targeted for the raw beginner. It explains everything in detail, showing the reader not only the schematic but diagrams of what wire to hook where. Even templates are provided for drilling the chassis. Very little is left to the imagination.

True, the sets are not overly sophisticated, but they're a great place to start. For instance the beginner's set uses a single 30 vacuum tube with a 45 volt B battery. In the next chapter another 30 tube is added as an audio amplifier.

You get excellent discussions on topics such as coupling amplifier circuits, insulators



that can be used on shortwave antennas, and code practice oscillators. And everything is nicely illustrated.

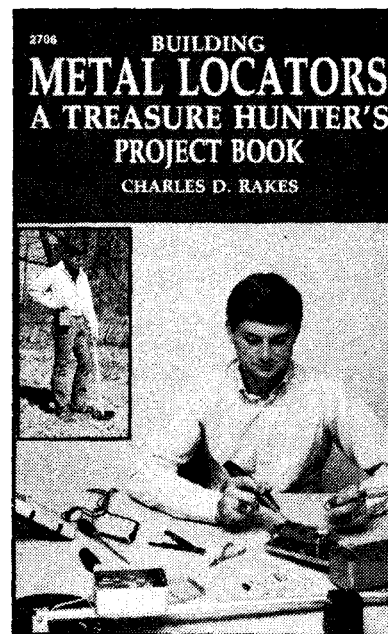
Here's another fun old-time shortwave radio book you should have. And it's reasonably priced! It's another MUST for your old time radio book collection. Order a copy. 7x9 booklet 36 pages

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- Introduction by Hugo Gernsback
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- Schematic Symbols
- Facts about Short-wave Coils
- Novel SW Coil Ideas
- The Beginner's Set
- The Beginner's Set Gets an Amplifier
- Smoothing Up the Regeneration Control
- New Kinks for the SW set
- Which Regeneration Scheme?
- Tuning the Short Wave Receiver
- How to Make Worth-While Audio Amplifiers
- Short Wave Operating Hints
- Coupling the RF Stage to Detector
- Audio Amplifiers for SW Sets
- Methods of Coupling to Speakers
- Aerials for Short-Wave Receivers
- Good Antenna Design
- Some Things You Don't Know About Aerials
- Learning the Code
- Home-Made Antenna Coupling Condensers
- A Panel Mounting SW Coil Assembly
- A Meter-Kilocycle Conversion Chart

Build a METAL LOCATOR and search for treasure!



BUILDING METAL LOCATORS
A Treasure Hunter's Project Book
by Charles D. Rakes

Metal detectors are fun to play with — profitable, too, if you "shoot" coins. You can locate "treasure", tools that kids drug into the backyard and lost, studs and pipes in the walls, or frisk your mother-in-law to see if she's carrying a handgun when she comes over for Thanksgiving dinner.

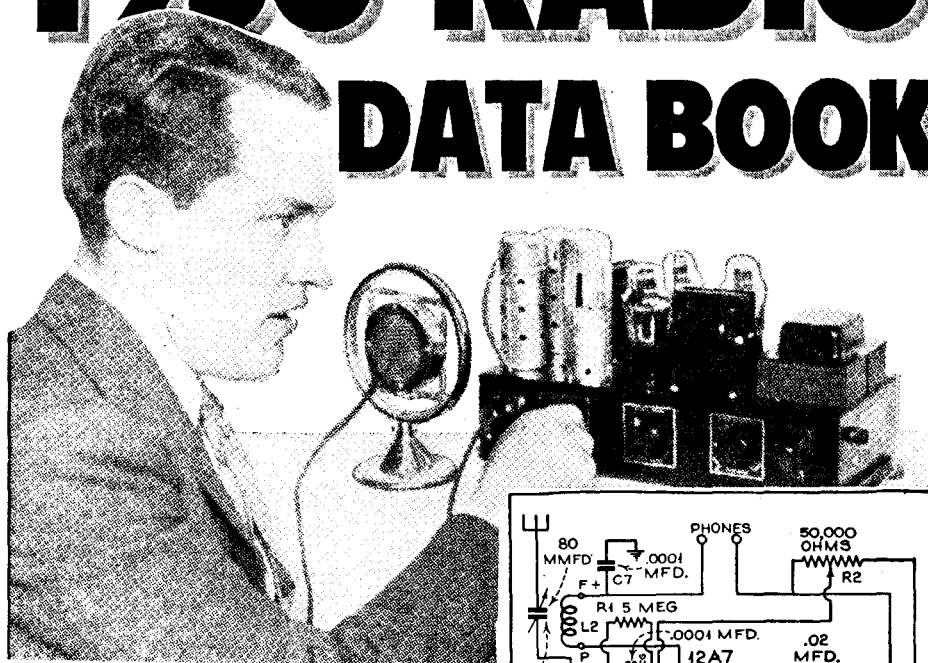
BFO metal detectors are neither hard to design nor build. And chapter two will show you how to build one. But it's the plans for all the other high-performance specialized detectors that make this book shine. You'll be shown how to build balance inductance locators, transmitter/receivers, coplanar VLF locator, and some other unusual designs. You even get a chapter on how to begin treasure hunting.

Believe it or not, the circuit board can be the easiest part of a detector to build. Winding coils is usually more difficult, but you will be shown all the secrets and taught all the techniques. If you like to build useful electronic projects, try this! You can build a detector for little money that will perform as well as the high priced models. Interesting book. Rare information. A book worth having. 5 1/2 x 8 1/2 paperback 116 pages

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1936 RADIO DATA BOOK



*Great Fun from
the 1930's!*

1936 RADIO DATA BOOK

by Radio News Magazine
reprinted by Lindsay Publications

Get the latest radio news by studying the best articles from the 1935 issues of Radio News and Shortwave Radio Magazine.

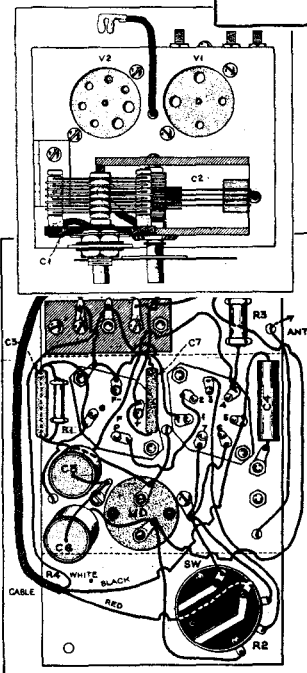
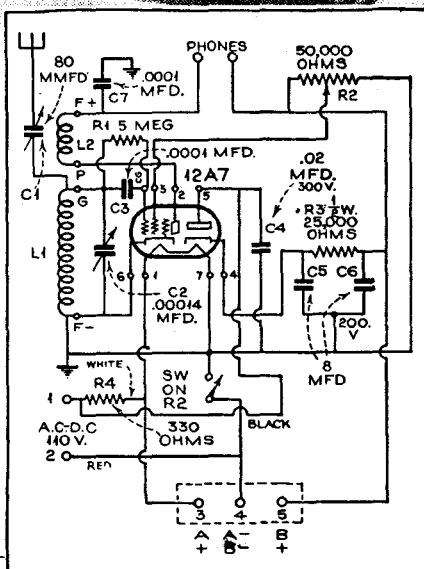
Learn about the latest developments in television - disk scanning versus cathode ray systems. Learn about a new Canadian television station.

You'll discover the brand new metal octal-base tubes and the receivers that use them such as the Atwater Kent 649, the GE A-82, and the Super Sky rider. You get plans for shortwave radios: a single tube all-wave set, a 3-band set, and 9-tube amateur receiver, and more.

Amateurs learn how to build transmitters, a 3/4 meter transceiver, and how to use the latest transmitting tubes.

Learn to build broadcast receivers: a universal superhet, a 2-volt DX'ers Super, a Superhet De Luxe, and more.

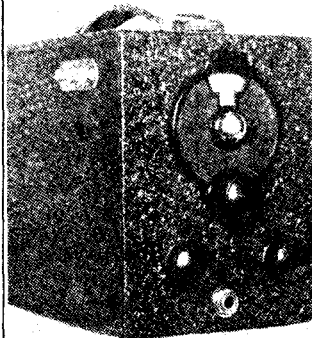
You also get articles on servicing, on audio amplifiers, on engineering design, and on radio experimenting. And you also get lists of stations broadcasting in the US and world shortwave



stations. Every page will well illustrate with photos, schematics, drawings and tables.

This is a fun book for old-time radio buffs. It's useful if you're a builder, and great reading whether you build or not. Another fascinating book for your radio reference library. 8 1/2 x 11 paperback 64 pages
Cat. no. 20218

\$5.95



EXPERIMENTAL SCIENCE

by George M. Hopkins

Fantastic! There is no other way to describe this incredibly illustrated two-volume set from 1906. It is certainly worth having.

Starting about 1889 "Scientific American" Magazine published a regular column by George Hopkins showing readers how they could build experimental equipment and test their own versions of new inventions such as the electric light, telephone, and phonograph. Hopkins' columns were routinely reprinted in books, and this 25th edition from 1906 had to be split into two volumes. And what a pair of volumes they are!

You'll find some of the most fantastic wood engravings ever, illustrating experimental equipment of all types.

Volume One consists of nineteen chapters on rest, motion, force, gyroscopes, liquids, gases, sound, heat, light, polarized light, microscopy, photography, magnetism, frictional (static) electricity, dynamic electricity.

Build a gyroscope, Foucault's pendulum, a simple hydraulic press, a hydraulic ram, simple air pump, Geissler tube, a recorder for sound vibrations, device for production of sounding waves, a simple phonograph, centrifugal siren, and Norremberg Doubler. And these are just a few of the projects in only the first half of the first volume!

You can build a simple microscope and accessories, or a simple camera with plate holder, make Daguerreotype photos like those from the 1840's (dangerous), experiment with magnets, static electricity, build all kinds of batteries, a device that converts heat directly into electricity, build bells, electromagnets, and even a 1/4 hp electric motor.

Volume Two will take you into more electricity by investigating AC electricity, arc lamps, high voltage induction coils, and much more. You can build a telephone. Build a magic lantern and perform a variety of interesting projections.

You'll get practical how-to on blowing glass, making lenses, etching glass, making test tube racks and the like, making and using a crucible furnace, sand casting, making carbon rods and plates, and more.

You'll be shown how to perform a variety of scientific parlor tricks. Discover scientific uses for the phonograph, build an opaque projector, and a simple acetylene gas generator. Try experiments with super cold liquid air, or new advances in photography including color photography, divining rods and metal detectors, long distance telephony, new wireless telegraphy, building an electric clock, high voltage experiments, even poly phase electricity!

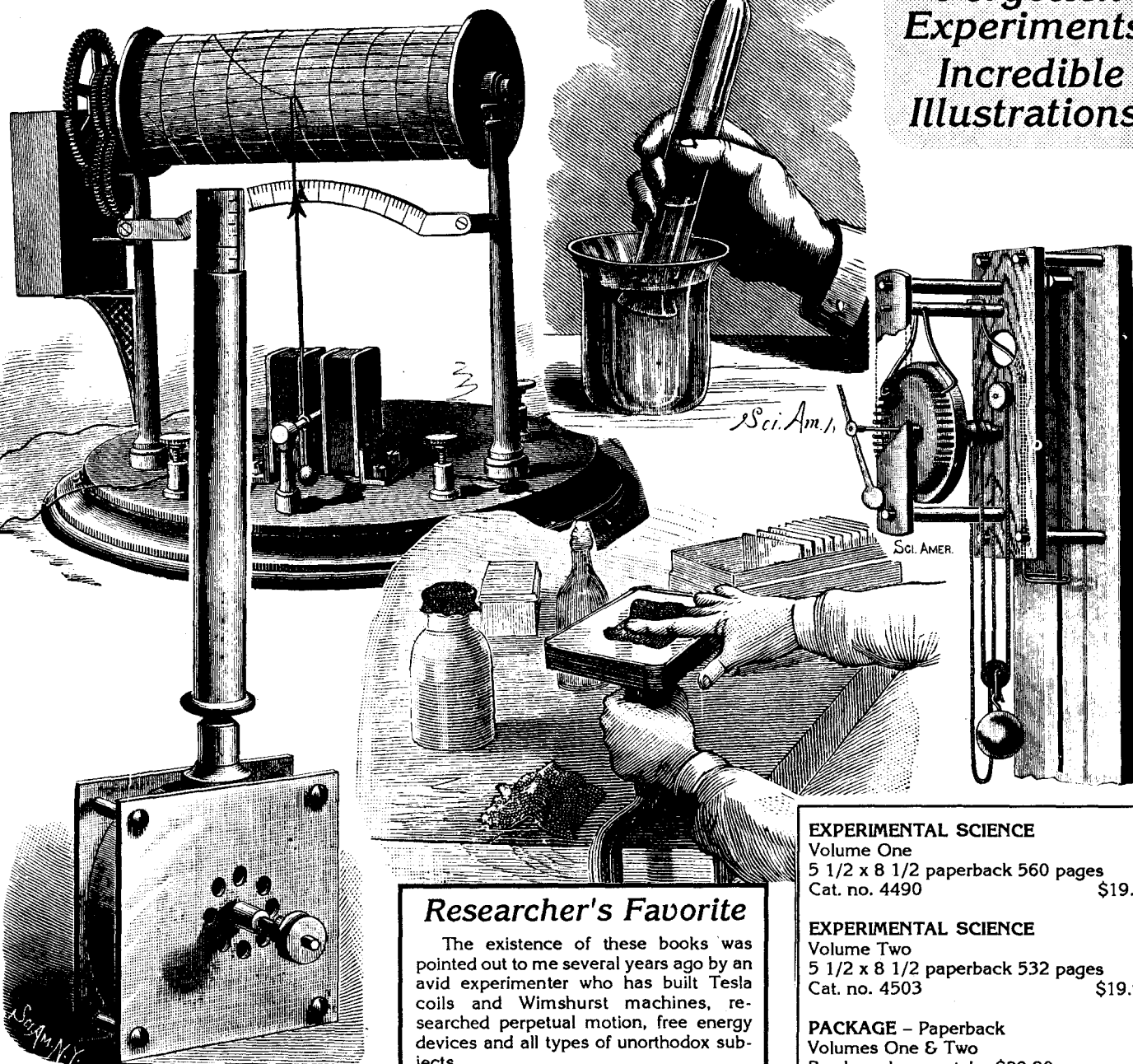
If you haven't guessed by now, this is both an introduction to physics and simple directions for building strange mechanical equipment.

The how-to you get is not overly detailed. You're expected to have some mechanical ability. You *WILL* get excellent illustrations that will show you almost everything you need to know. Any additional secrets are pointed out in the text.

If you want to build and run scientific equipment that hasn't even been seen in decades, you should have this. Kids can build a unique

EXPERIMENTAL SCIENCE!

Over 1,000
Pages!
Incredible
Machines!
Forgotten
Experiments!
Incredible
Illustrations!



science fair project. Old book lovers will treasure this. And if you love machines, you will get hours and hours of enjoyable reading.

It's impossible to reveal the scope and beauty of these two books in the limited space this catalog provides. But take my word for it, these are fascinating books. Top quality. Expensive, but worth the price. Look them over carefully.

Researcher's Favorite

The existence of these books was pointed out to me several years ago by an avid experimenter who has built Tesla coils and Wimshurst machines, researched perpetual motion, free energy devices and all types of unorthodox subjects.

He found *Experimental Science* to be a very valuable reference, but because of its rarity, he hadn't been able to buy a set of his own. When I told him that I was going to take a chance on reprinting the two volume set, he jumped for joy. Now he can afford his own set. So can you.

We're confident you'll find *Experimental Science* as much fun and as useful as we have.

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SOLD OUT

Build a High-Voltage WIMSHURST MACHINE

THE WIMSHURST MACHINE

How to Make and Use It
by Alfred W Marshall
reprinted by
Lindsay Publications

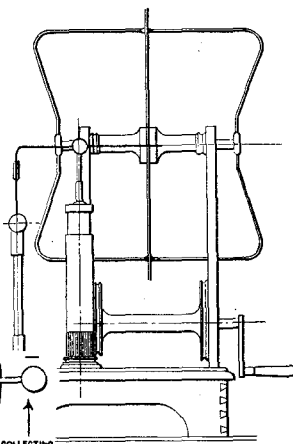
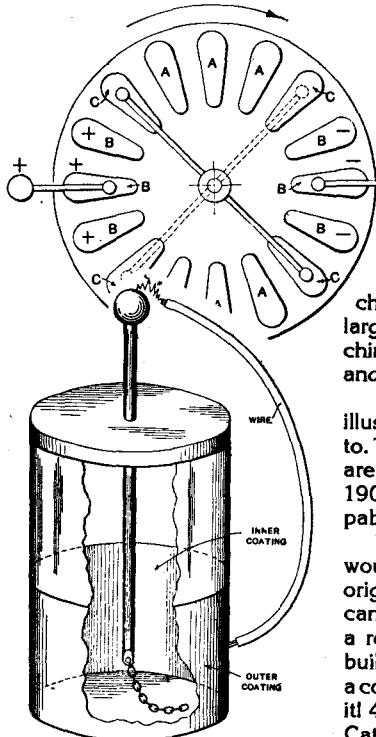
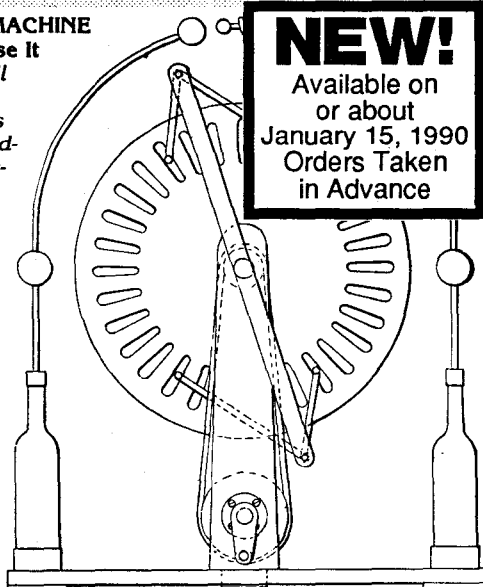
"A practical handbook on the construction and working of the Wimshurst machine, including radiography and wireless telegraphy, etc., and other static electrical apparatus."

Build yourself a copy of this classic lightning bolt generator. This is no toy! Its 24" plates will knock your socks off — and probably electrocute you if used with Leyden jar accumulators. This is a heavy duty machine.

Chapters include introduction, static electricity, the electrophorus, the electrostatic, condensers, the Leyden jar, parts of a Wimshurst machine, making and management of Wimshurst ma-

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chine, examples of machines, a large Wimshurst machine, a machine for X-Ray work (dangerous), and experiments with machines.

This is a small book loaded with illustrations and wall-to-wall how-to. There are photographs but they are of poor quality. After all, in 1908 not every printer was capable of printing photographs.

This is quite a rare book. You would be hard pressed to find an original copy at any price. But you can have a copy for your library at a reasonable price and use it to build a machine or just to read. Get a copy. Great little book. You'll like it! 4x7 paperback 112 pages
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EARTH ENERGY - A
Dowser's Investigation
of Ley Lines
by J. H. Fidler

Ley Lines are supposed to be lines of energy that run through the earth in some type of a pattern. This British book shows how dowsing is used to investigate these power channels.

From the back cover: "In this updated and substantially revised edition of his widely acclaimed investigation of ley lines, J. H. Fidler shows how dowsing techniques continue to open up new and significant perspectives on the nature and possible functions of the megalithic ley line system."

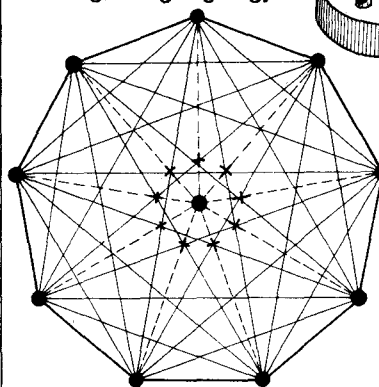
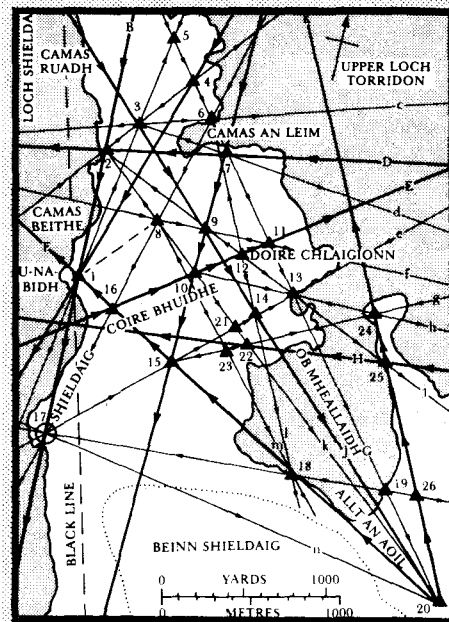
Through an extensive and rigorous experimental programme, developed in his home area of the west coast of Scotland, Dr. Fidler has established ways in which a standing stone can be 'charged' with energy and then permanently 'fixed'.

His conclusions in this remarkable and important study have considerable implications. They suggest that earth energy, harnessed by the ley line system, is human in origin and that modern developments such as cities and motorways may well be altering important biological aspects of the earthy energy system."

Ten chapters cover such topics as Ley Hunting, Measuring the Charge, The Charge in Stones, Charged Stones and Plant Growth, Lines and Interrupters, Black Lines and Wavelengths, and more.

Within the chapters are discussions of charging by handling, designing a gy-

EARTH ENERGY A Dowser's Investigations of Ley Lines



rometer, psi-factor and its variations, effects of the moons and sunspots, quartz rocks and magnets, Bluestone increases growth, discovering a black line, conditions for setting up a ley complex and much more.

A very unusual book! With 25 drawings and a dozen photos. Is there something to this? I certainly don't know. You decide. Get a copy. 5 1/2 x 8 1/2 paperback 192 pages
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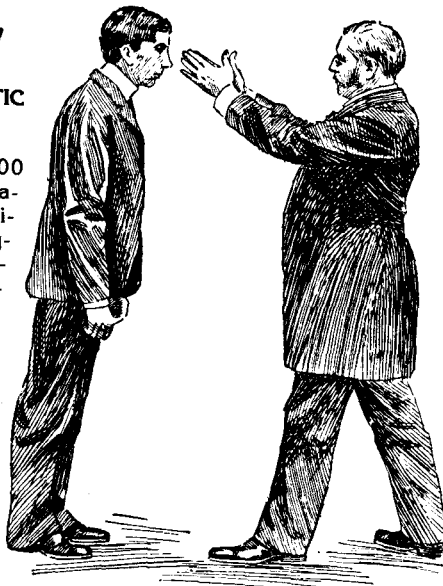
HOW TO GIVE HYPNOTIC EXHIBITIONS

by Prof. L. A. Marraden

It won't be long before you want to take your hypnotic powers into nightclubs to earn a few bucks. Let the professor show you how he put together his act in 1900. Learn how to advertise, write a spiel, ask for volunteers, hypnotize them, and perform entertaining experiments. You get loads of illustrations, ideas, hints and tips. Great little book. Get a copy! 5 1/2 x 8 1/2 paperback 64 pages

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Dear Mr. Lindsay

Many people would probably attempt radio building, if the components of the schematic were understood and easy to get.

On pg 258 of your 1934 Short-wave Manual uses a one tube regenerative radio project. I had no 6C8G tube, so I used a 12AU7 instead. For B+, I used 2-9 volt transistor batteries in series. The 12AU7 will operate on 6 or 12 volts.

Extra Data on the 12AU7 as follows: Filaments 4 & 5, with pin 9 as the center tap for 6 bolt operation plates 1 & 6, grids 2 & 7, cathodes 3 & 8.

This is by no means a dull project, no matter how you build it. Code is crispy clear and the stations are easily separated. The best feature?— The project only took a few hours to assemble.

Sincerely
Alan J Bellanger

Dear Sirs:

I wish to acknowledge receipt of both your catalog of Electrical Books, and the 1934 Official Short Wave Radio Manual.

I am enjoying the Manual very much. I can recall my reading of many of those articles in the original copies of "Short Wave Craft".

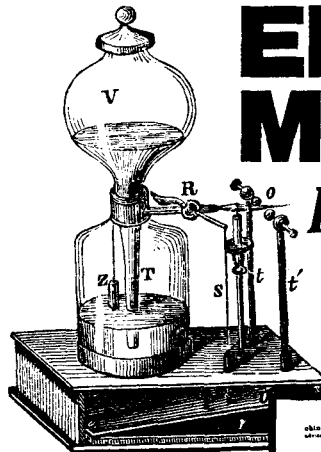
I could hardly wait until the next issue appeared on the newsstand. I was a nut for trying different types of regeneration control - throttle condenser, a pot across the tickler, a pot in the screen, etc. I tried every method I heard or read about.

Your book has brought back memories of 55 years ago, and I am pleased to have read about it. Many thanks.

Yours very truly,
Eric G Lambert (VE1RR) Canada

Silliman's Electrical Machines

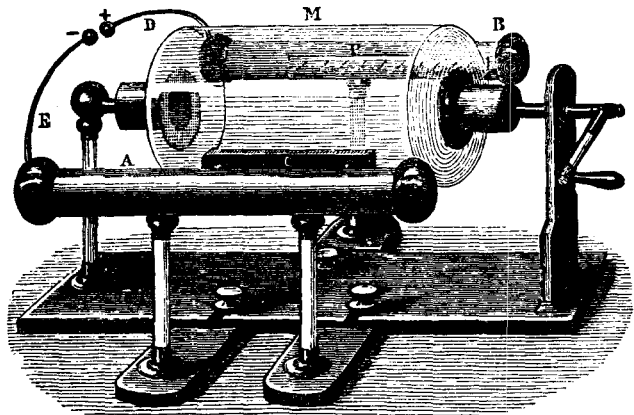
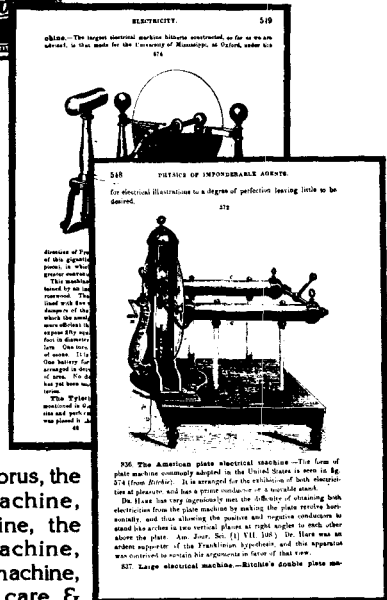
High Voltage equipment from 1865!



Silliman's
ELECTRICAL
MACHINES
reprinted by Lindsay
Publications

If you'd like to build a powerful lightning bolt generator, this a publication you should study for ideas. You get beautifully illustrated pages from Benjamin Silliman's book entitled Principles of Physics or Natural Philosophy published in 1865.

Learn about electrophorus, the cylinder electrical machine, Ramsden's plate machine, the American plate machine, Ritchie's double plate machine, the Tylerian machine, care & management of machines, elec-



tricity from steam, and other sources of electrical excitement. Discover seven simple but entertaining experiments. Then investigate equipment to store electricity such as the Åepinus condenser, Volta's condensing electroscope, Dr. Hare's single gold leaf electrometer, the Leyden jar, Leyden jar batteries, the spark, Kinnersley's thermometer, electrical discharge in a vacuum, the diamond jar, scintillating tube and

magic squares, chemical experiments, Volta's lamp and more.

This is another collection of rare static electricity information that is no longer found in modern physics textbooks. And wood cut illustrations like these haven't been produced in decades. Get a copy of these. It will make an excellent addition to your reference library. 5 1/2 x 8 1/2 booklet 24 pages

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Electrical Instrument Making for Amateurs

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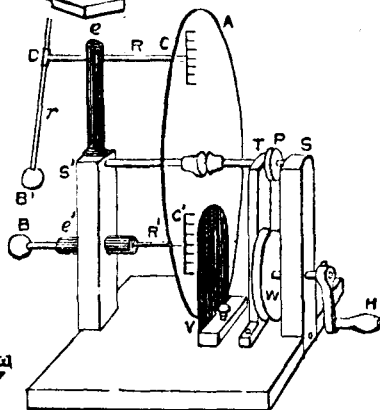
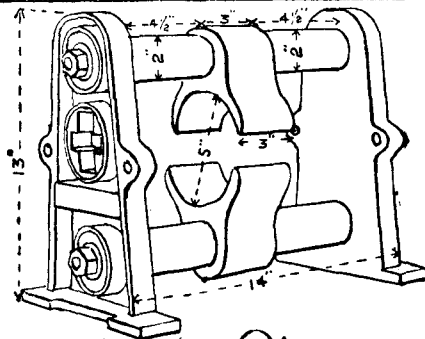
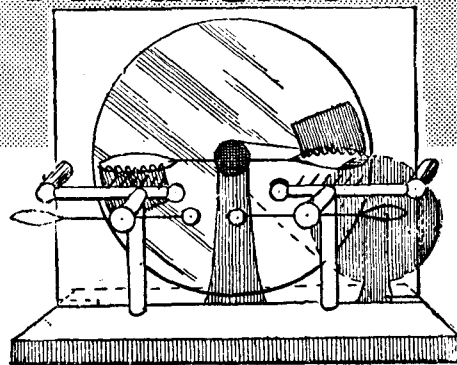
The words "electrical instruments" bring to mind test equipment: meters, signal generators, and oscilloscopes. But back in 1888 when this volume first hit the bookstores, electrical instruments could be anything from simple Leyden Jar capacitors and static electricity machines to dynamos and telephones, as well as ammeters, voltmeter and galvanometers.

With this as your guide you can go back a hundred years and imagine what it must have been like to be experimenting right at the cutting edge of technology. You can build your own batteries from scratch, use them to run a shocking coil while you monitor the current draw with homemade meters!

You get basic information on materials, soldering, and working glass. Then you build pith ball and gold leaf electroscopes, a Coulomb torsion balance, and Volta's electrophorus static generator. You'll learn how to take a sheet of glass and cut a circle from it, drill a hole in the center and use it to build Bertsch's high-voltage static generator, Carre's Dielectric machine, a Holtz machine, and a Wimshurst influence machine. Any one of these machines is powerful enough to shock the underwear off Aunt Annabelle! And you get info on building a Leyden Jar, Franklin plates, and a microFarad condenser.

Next come the devices that use current electricity. You'll learn how to build a medical coil that produces a 1/2" spark, or if you care to make a simple modification you can get 1" spark, in which case the machine is called an induction coil. With a powerful magnet you can make a shocking machine which appears to be little more than a simple magneto. Then you build a uni-direction current machine (a motor), a dynamo, an ammeter, a voltmeter, a galvanometer, and a thermopile that produces electricity directly from heat.

You'll be shown how to build batteries, a single fluid cell, a double fluid cell, and using these two basic configurations how to create powerful batteries using chemicals from zinc chloride and sulphuric acid to sal ammoniac and potassium dichromate which are more commonly known as the Daniell, Bunsen, Smee, Walker cells and others.



Then you get simple plans so that you can build a working electrical telephone, the newest rage a hundred years ago. And finally you get a couple of appendices that add additional information on galvanometers and batteries.

Obviously so many topics are covered in such a small book that

the number pages devoted to each topic are necessarily limited. Any one topic could really be expanded into a book of its own. But even so, you get enough useful information to build working equipment. The illustrations are primitive by today's standards, but are very informative nonetheless.

This is a fascinating book you're sure to enjoy. Lot's of valuable information at a price far below what you would have to pay for a now-rare original copy. With this book you can go back and rediscover the world of electricity. Get a copy. You'll really like it. 5x7 paperback 183 pages

Cat. no. 4929

\$9.95

EDISON



Edison— A Biography by Mathew Josephson

Edison— the inventor's inventor. Everyone has heard of him. But are all the wild stories we've heard really true? What kind of a guy was he?

Edison never really attended school. He was taught by his mother, and his father was a strange man. Edison's first adult job was as a telegrapher which later led him to invent repeater relays, automatic telegraphs, circuits for sending several different telegraphs in different directions over the same wire, and on and on. He even got himself in the middle of a bitter fight between the robber baron Jay Gould and the Western Union monopoly— talk about dirty pool!

To get away from New York, Edison built a lab in Menlo Park, New Jersey. And for ten years excited the world with new inventions from the phonograph and electric light to the electric locomotives and even parts of the telephone (Alexander Graham Bell beat Edison to the patent office by just days.)

By the time Edison went back to New York to build the electric system, he was already a millionaire (at 28). Then came a new lab in West Orange, a second wife (after his first died), moving pictures, an ore separator, an alkaline battery and much more.

Here's the inside scoop on the man who is considered the first professional inventor. You'll find that Edison didn't have time to pursue all his ideas, and that there are probably ideas and inventions waiting to be resurrected somewhere in the more than 1000 patents Edison held.

Read about this incredible guy. Edison's wife finally put her foot down when the inventor turned 75 and told him he has to work fewer hours — so he cut back to 16 hours a day!

Get a copy of this. If you enjoy technology, inventing, collecting, or just about anything you see in this catalog, you should find this biography quite interesting. It's a little slow reading in places, but it's loaded with details that will tell you the truth about what happened and why. After you read this, you can better appreciate who Edison was and why this country and the world is the way it is today. Excellent book. Quite reasonably priced. 6 x 9 paperback 512 pages with photos

Cat. no. 727

\$10.95

STATIC ELECTRICITY!

*Unusual High Voltage Equipment!
Dozens of Unusual Experiments!*

STATIC ELECTRICITY

by J. H. Pepper

reprinted by

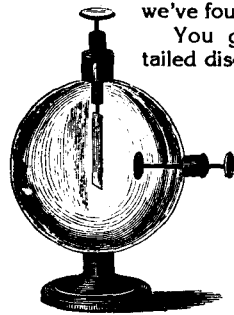
Lindsay Publications

Static electricity is a nuisance when you walk across a carpet and then watch a blue flame jump out from a doorknob to burn off the end of your finger. But this kind of electricity can also be fascinating.

Back in the 1880's when people knew little about current electricity, static or frictional electricity was a scientific curiosity in laboratories and parlours. Giant lightning generators were built by amateurs and educators and bizarre experiments performed.

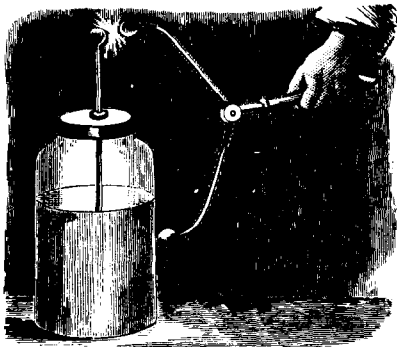
From Pepper's "Cyclopaedic Science Simplified" we've reprinted the chapter entitled "Electricity, Frictional or Statical", one of the best textbook discussions we've found yet.

You get a detailed discussion of



electroscopes, 17 electroscope experiments, Cavallo's Cylinder Electrical Machine, the Royal Polytechnic Great Plate machine, Winter's electrical machine, the Holtz machine, the Electric Well experiment, experiments in induction, charge storage techniques, lengthy discussion of Leyden jars, the Leyden battery, followed by another thirty experiments including Cuthbertson's Balance Electrometer, the electric bomb, Harris's thundercloud needle, and a couple of machines for generating high voltage with a steam jet! And there is much more.

Everyone seems to be building electronic devices with in-

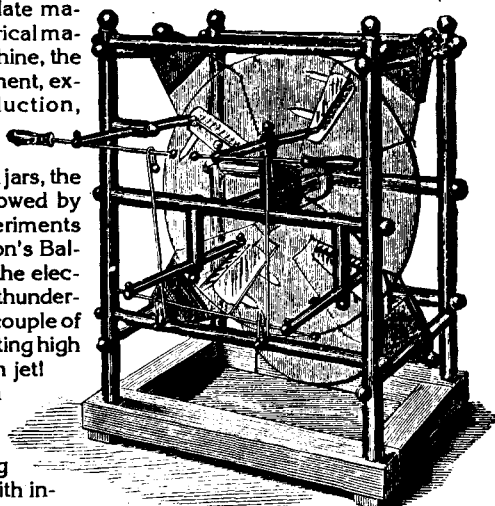


tegrated circuits. No one seems to know about old time electricity. Here, in one volume are forgotten electrical devices, principles, and experiments. You'll find page after page of unusual information and illustrations.

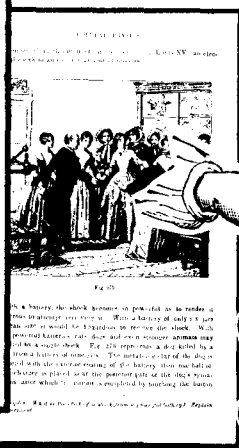
There are a lot of old science textbooks available in old bookstores for little money. But a really good discussion of static electricity like this one is hard to find.

Although this is not really a cookbook for building equipment, the wood engravings are quite detailed, and the text describes the equipment thoroughly enough that you could probably build the devices without great trouble. This is a great source for unusual science fair projects.

If you like to explore old scientific principles, build unusual apparatus, or just impress your friends, consider a copy of this unusual book. I think you'll like it. 5 1/2 x 8 1/2 paperback 88 pages Cat. no. 4783 \$5.95



Peck's Electrical Recreations



William Peck's ELECTRICAL RECREATIONS

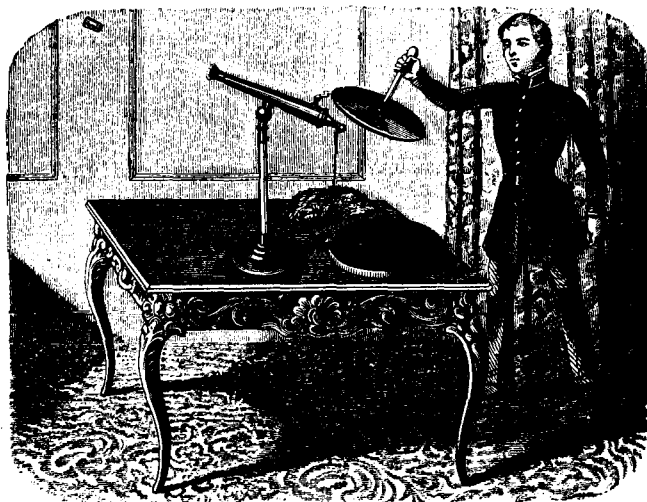
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Go back to 1860 and discover static electricity experiments designed to inform and entertain students studying physics in schools and academies.

If you've collected other early static electricity works, you'll find some of this to be old hat. But other parts will be new and quite interesting.

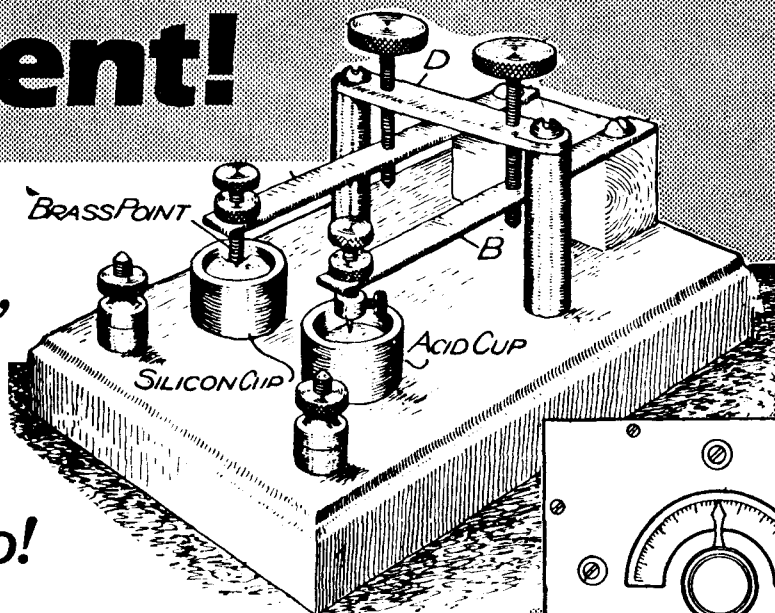
Learn about the electrical chime, an electrified puppet, the electrical wheel, the electrical egg, the electrical square, the electrical cannon, the condenser of Epinus, using the condenser, slow and fast discharge of the condenser, the Leyden jar, a battery of Leyden jars, the condensing electrometer, electrocution of dogs!, heating power of electricity, and the mechanical effects of electricity.

You'll find fascinating old time wood cuts illustrating almost every article. If static electricity is your field, you'll want to add this low-cost booklet to your reference library. Very interesting and very unusual. Get a copy. 5 1/2 x 8 1/2 booklet 24 pages Cat. no. 839 \$3.25



High Power Wireless Equipment!

**Tesla Equipment,
Crystal Detectors,
Rare Radio
Equipment from
1910-11!
Incredible How-To!**



HIGH POWER WIRELESS EQUIPMENT

by Alfred Morgan

reprinted from *Popular Electricity Magazine* 1910-11

If you wanted to try your hand at the newest 1910 electrical craze of transmitting telegraphy without wires, you had to build your equipment. The few pieces of equipment available commercially would probably have been way beyond your pocket book.

Here, in a series of fifteen installments, Alfred Morgan provided his readers with complete, detailed, dimensioned directions for building everything from the key to the aerial, from the induction coil and spark gap, to the helical transmitting coils. As a slice of early radio history this is fascinating reading.

You won't want to build a spark-gap transmitter, they're inefficient and illegal to operate. But you'll find bits and pieces quite valuable. If you build crystal sets, you'll find the detectors very valuable.

If you like to build high voltage equipment, you'll find the induction coil, spark gaps, condenser and other plans useful. Early transmitters were essentially Tesla coils turned off and on with a key. A later chapter actually describes Tesla and the work he did, how to build one of his coils, how to use his equipment in wireless telegraphy.

And you'll find a chapter loaded with hints and kinks on everything from building condensers and using a coherer detector to how enamel wire and make a variometer.

This is all practical hands-on early radio and high-voltage electricity reprinted from the original hard-to-find magazines. Think about the possibilities. It might be fun to build an old wireless station just to show people today how it was done before semiconductors. No matter what your angle or interest is, you'll find this detailed how-to to be fascinating. Excellent rare, early information! Order a copy of this. It's worth having.

5 1/2 x 8 1/2 paperback 99 pages

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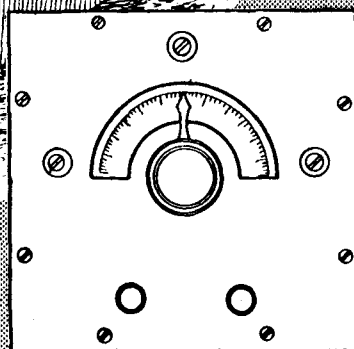
\$9.95

HARDCOVER EDITION

A small portion of the print run has been beautifully hardbound for libraries and collectors.

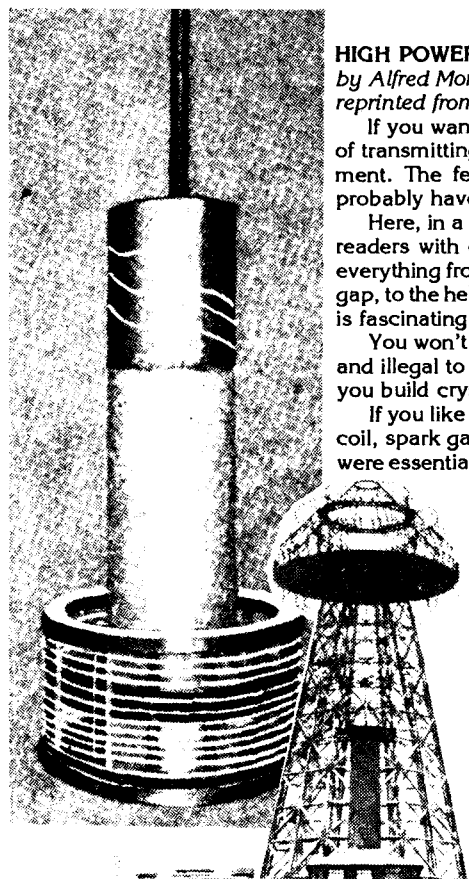
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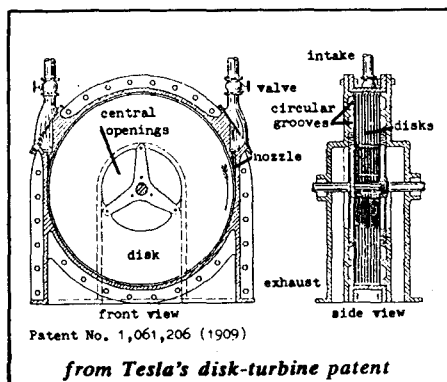


CONTENTS:

- Aerials
- Aerial Switch & Induction Coil
- Induction Coil Secondary; Key
- Independent Adjustable Interrupter
- Oscillation Condenser
- Transmitting Helix
- Hot Wire Ammeter
- Two KW Closed Core Transformer
- Two KW Transformer Cont'd
- Detectors
- Detectors Cont'd
- Potentiometer; Fixed Condenser
- Loose Coupled Tuning Coil
- Variable Condenser
- Directions for Operating
- Tesla and His Wireless Age
- Construction of Tesla High-Frequency Apparatus
- High Frequency Apparatus for a Wireless Set
- Hints and Kinks



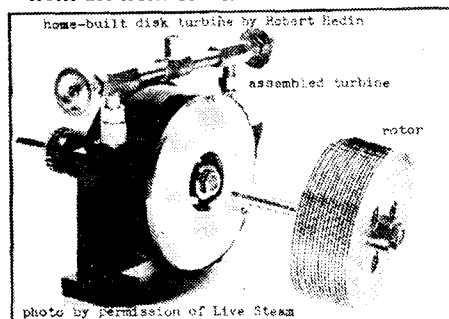
TESLA'S LOST Inventions!



TESLA: The Lost Inventions
by George Trinkaus

"Here are the suppressed inventions of Nikola Tesla all in one place rendered in clear English and in 42 illustrations. Tesla was famous at the turn of the century for inventing the alternating-current system still in use today. But his later inventions, documented in some 30 U.S. patents between 1890 and 1921, have never been utilized as Tesla intended despite their obvious potential for advancing in fundamental ways the technology of modern civilization. Among these lost inventions: the disk-turbine rotary engine, the tesla-coil electric energy magnifier, high-frequency lighting systems, the magnifying transmitter, wireless power, and the free-energy receiver."

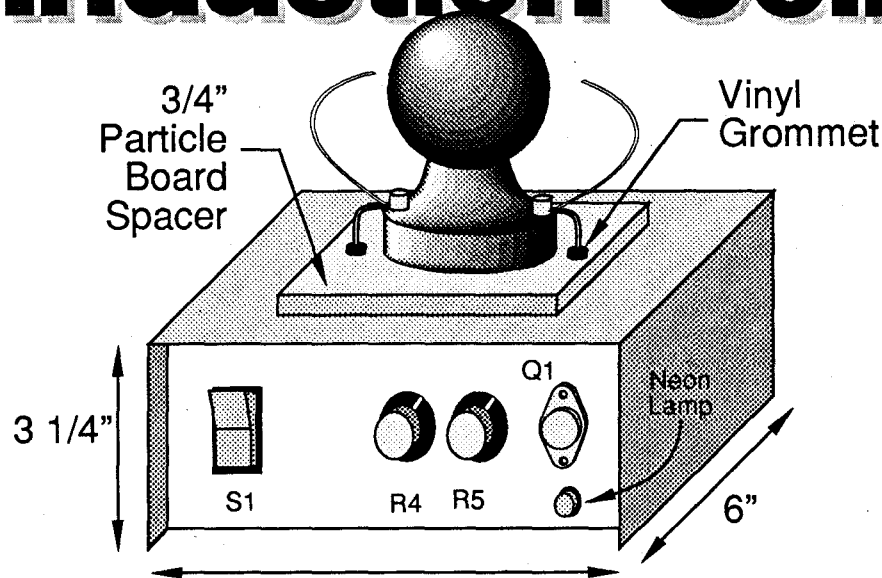
—from the front cover.



Like Trinkaus's other Tesla book, the only major criticism that can be leveled here is that the chapters are too short. On the other hand, even if each topic were expanded into a full-blown book, you would probably find Tesla so interesting that your curiosity would still not be satisfied.

Interesting, unusual information, especially if you're just beginning your study of Tesla. Fairly priced. 8 1/2 x 7 booklet 34 pages Cat. no. 748 \$5.95

How to Build a 40,000 Volt Induction Coil



**How to Build a
40,000 VOLT INDUCTION COIL**
by Walt Noon

Are you looking for a fast and simple way to generate high voltage? Then you should build this nifty little device. All of the parts should be available in your area, and depending how much experience you have building electronic equipment, you should be able to bolt it together in a few hours.

As you already know, the ignition coil in your automobile is the modern equivalent of an old time induction coil. It is nothing more than a transformer that converts low voltage into very high voltage. The points in your automobile replace the old fashioned spark gap. Every time the points open, a pulse of DC current hits the coil like a hammer hits a bell. The ignition coil "rings" like a bell and produces a burst of high voltage. If you "hit" the coil fast enough, the ringing seems to be continuous.

Walt Noon's circuit here replaces the spark gap and the points with a low cost solid state circuit. The circuit takes 110 VAC out of your wall and converts it into a string of DC pulses. The pulses are sent to the terminals of an ignition coil that you can purchase at your local discount store. Off the high voltage terminal comes a solid 40,000 volts that can be used for a variety of experiments including plasma globes and Kirlian photography.

The circuit, based on a 555 timer integrated circuit, provides pulses with adjustable power and frequency. This allows you to easily tune the pulses to the natural resonant frequency of the coil which will significantly increase the output voltage.

You get drawings of the unit, parts list, circuit diagram, photos and assembly instructions for the coil. You are expected to have at least some experience building modern electronic equipment with perf board. You get hints, tips and suggestions on where and how to make circuit modifications.

Probably best of all, Walt includes eight different experiments plus extensive details on Kirlian photography. He'll show you how to modify an inexpensive 35mm camera to take these unusual photographs in color and black and white. You also get six Kirlian photographs taken with the equipment he shows you how to build.

If you want to try your hand at high voltage experiments, this might be just the

way for you to "cut your teeth", and it's something you'll be proud to show your friends. And it's a good way to literally shock the pants off them! Get a copy of this. It's unusual. It's well written. And it's inexpensive. You'll like it. 5 1/2 x 8 1/2 booklet 24 pages

Cat. no. 844

\$4.95



Tesla Coil Secrets!

TESLA COIL SECRETS by R. A. Ford

Be the first on your block to blast your neighborhood with high voltage! Shock the socks off your friends and relatives! Zap those pesky cats digging in the garbage can! Make people think you really are building a Frankenstein monster in your basement!

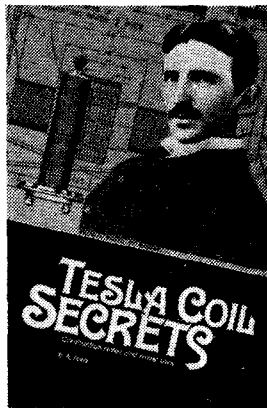
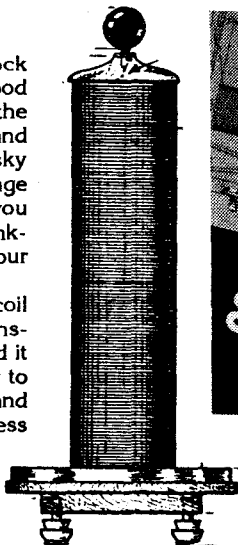
As you know, a Tesla coil is a high voltage transformer. Nikola Tesla used it at the turn of the century to generate lightning bolts and to investigate the wireless transmission of electrical power.

This fascinating book is not really a how-to-build book. Actually, an avid researcher who has built several coils and has accumulated articles, clippings, notes, and bits-and-pieces over the years has opened up his scrapbooks to us.

You'll see all the interesting hints, plans, and wiring diagrams gleaned from early magazines that ceased publication decades ago along with formulas, notes, and observations he believes are important for building powerful coils. Many of the old articles are so detailed that you can probably use them to build a powerful experimental coil. There are notes on one machine the could kick out five foot lightning bolts!

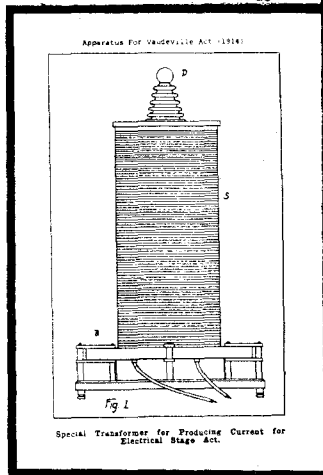
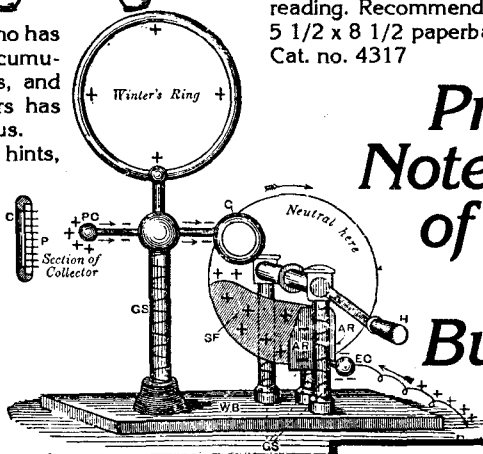
If you're really into Tesla coils, you may have seen a few of these clippings already. But I'll bet there are others you haven't seen. You'll get info on rotary spark gaps, anti-kick-back devices, Leyden jar capacitor construction, conical Tesla coils, Oudin coils, and suggestions on research into wireless power transmission, plant growth stimulation, medical uses, and more.

Many of the reprinted articles are fuzzy and a few hard to read. Most have been enlarged to bring out the construction details, and have been

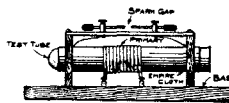


Tesla didn't have time to pursue or reveal. Rare info! Too bad the book isn't ten times bigger. Get a copy for the reference library if for no other reason. Interesting reading. Recommended!
5 1/2 x 8 1/2 paperback 74 pages
Cat. no. 4317 \$6.95

Private Notebook of Tesla Coil Builder

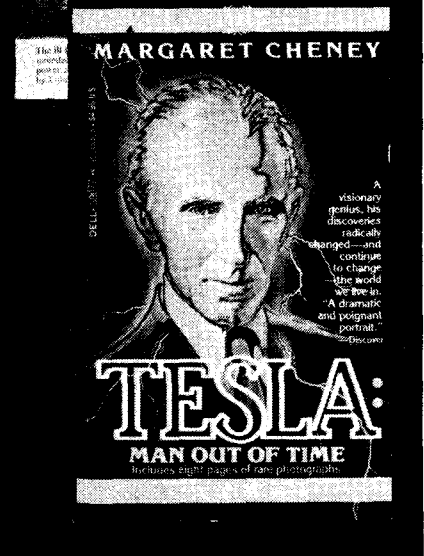


A MINIATURE TESLA COIL.
Most owners of small induction coils have at some time or other wished that a Tesla coil giving results could be built to run on their apparatus. This article describes a Tesla coil made to work with a one-quarter inch spark coil.



Make a base 8x3x3/4 inches, and two uprights two inches square and one-quarter inch thick. Now get a test tube 5/4 inches long, inside diameter three-quarters inch. A cardboard tube of the same dimensions will do. Through each of the uprights drill a hole large enough to let the test tube slip through. Starting one-half inch from the end of the tube, wind on about 135 turns of No. 31 single silk copper wire, spacing the turns 1/32

Who Was Nikola Tesla?



TESLA: MAN OUT OF TIME by Margaret Cheney

"Flamboyant, eccentric, almost supernaturally gifted, had he been born today he would still be ahead of his time. Called a madman by some, a genius by others, and an enigma by nearly everyone, Nikola Tesla was perhaps the greatest inventor the world has ever known..."

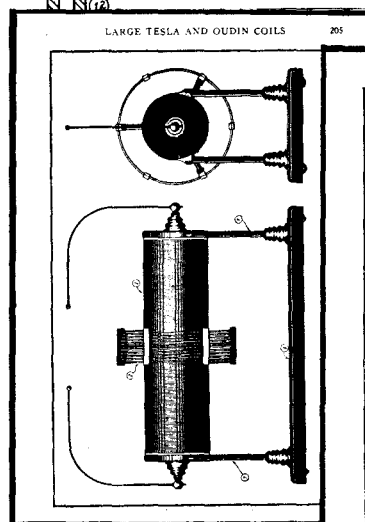
"It was Tesla who harnessed the alternating electrical current that we use today... Tesla who actually invented radio... Tesla who invented fluorescent lighting and the incredible bladeless turbine. He introduced us to the fundamentals of robotics and computer and missile science, which continued to create and transform the future..."

There are many books about Tesla, some of them are garbage written by groupies who worship Tesla as a god. Here's a great factual biography that has gotten great reviews — the story of a wizard who was Edison's enemy, Mark Twain's friend, and J. P. Morgan's client. This is the real story. Excellent book at a reasonable price. Order a copy. 310 pages "mass" paperback a few photos

Cat. no. 717

\$4.95

Classic High Voltage Text is Back in Print!



ONE HALF KILOWATT TRANSFORMER

LARGE TEST

In the present time the most popular method of generating high voltage is given by the Tesla transformer. The coils are made of copper wire, or of the former chapters, and the coils are excellent for throwing a 50,000 volt spark in the size shown. The production of the spark can be produced in the Tesla transformer in the proper manner. The result of the production of the spark and it is called the Oudin coil. The hands of an engineer can be used to produce the spark from the fingertips of the body and give a very high frequency of the spark. The production of a blue spark from the extremities of the body is called the Oudin coil. The hands of an engineer can be used to produce the spark from the fingertips of the body and give a very high frequency of the spark. The production of a blue spark from the extremities of the body is called the Oudin coil.

Oudin coil data.

Primary: 8 turns edge wound copper strip

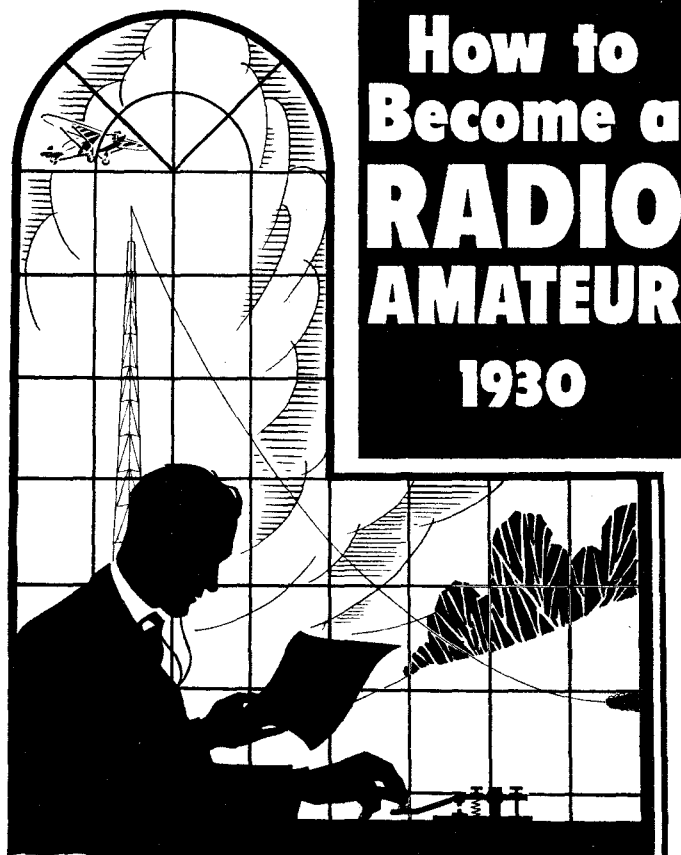
Secondary: 600 turns #16 cardboard cylinder

Fig. 9—Data for Oudin transformer

\$11.95

\$18.95

HIGH FREQUENCY APPARATUS



HOW TO BECOME A RADIO AMATEUR (1930)

by the American Radio Relay League

reprinted by Lindsay Publications

In 1930 thousands of people were not only fascinated by the arrival of broadcast radio, but by the magic long distance communication possible through short-waves. This simple booklet was intended to draft many of those people into the hobby of ham radio.

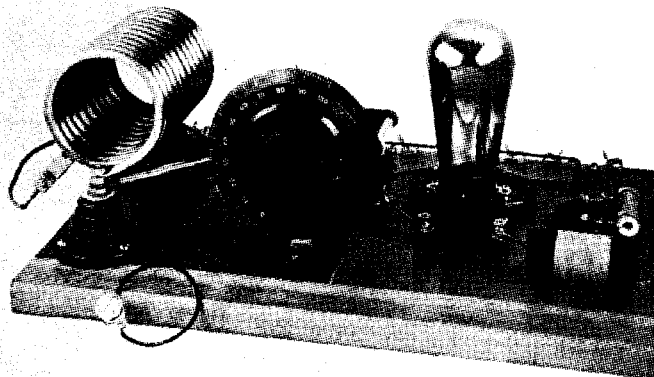
Here you'll discover the amateur bands as they then existed, how to learn Morse code, how to build a two-tube (UV-201-A) bread board regenerative receiver for the 80 meter band, an oscillating transmitter using a UX-210

Build a 1930 Ham Radio Station!

tube, an AC power supply, tips on setting up the radio station, and finally how to operate it.

Not only is this great nostalgia, it is also quite practical should you want to build a copy of the regenerative receiver. You may want to build a copy of the transmitter for display or occasional demonstration, but you probably wouldn't want to use it on the air.

Discover 1930 ham radio. Build early equipment. Lots of fun reading. Low cost. Get a copy. 8 1/2 x 11 booklet — 32 pages Cat. no. 20226 \$2.95



Nikola Tesla Writings CONTENTS

Part I — Polyphase Currents

- Biographical and Introductory
- A New System of Alternating Current Motors and Transformers
- The Tesla Rotating Magnetic Field — Motors with Closed Conductors — Synchronizing Motors — Rotating Field Transformers
- Modifications and Expansions of the Tesla Polyphase Systems
- Utilizing Familiar Types of Generators of the Continuous Current Type
- Method of Obtaining Desired Speed of Motor or Generator
- Regulating for Rotary Current Motors
- Single Circuit, Self-Starting Synchronizing Motors
- Change from Double Current to Single Current Motors
- Motor with "Current Lag" Artificially Secured
- Another Method of Transformation from a Torque to A Synchronizing Motor
- "Magnetic Lag" Motor
- Method of Obtaining Difference of Phase by Magnetic Shielding
- Type of Tesla Single-Phase Motor
- Motors with Circuits of Different Resistance
- Motor with Equal Magnetic Energies in Field and Armature
- Motors with Coinciding Maxima of Magnetic Effect in Armature and Field
- Motor Based on the Difference of Phase in the Magnetization of the Inner and Outer Parts of an Iron Core
- Another Type of Tesla Induction Motor
- Combinations of Synchronizing Motor and Torque Motor
- Motor with a Condenser in the Armature Circuit
- Motor with Condenser in One of the Field Circuits
- Tesla Polyphase Transformer
- A Constant Current Transformer with Magnetic Shield Between Coils of Primary and Secondary.

Part II — Tesla Effects with High Frequency and High Potential Currents

- Introductory — The Scope of the Tesla Lectures
- The New York Lecture. Experiments with Alternate Currents of Very High Frequency, and Their Application to Methods of Artificial Illumination, May 20, 1891
- The London Lecture. Experiments with Alternate Currents of High Potential and High Frequency, February 3, 1892
- The Philadelphia and St. Louis Lecture. On Light and Other High Frequency Phenomena, February and March, 1893
- Tesla Alternating Current Generators for High Frequency
- Alternate Current Electrostatic Induction Apparatus
- "Massage" with Currents of High Frequency
- Electric Discharge in Vacuum Tubes.

Part III — Miscellaneous Inventions and Writings

- Method of Obtaining Direct from Alternating Currents
- Condensers with Plates in Oil
- Electrolytic Registering Meter
- Thermo-Magnetic Motors and Pyro-Magnetic Generators
- Anti-Sparking Dynamo Brush and Commutator
- Auxiliary Brush Regulation of Direct Current Dynamos
- Improvement in Dynamo and Motor Construction
- Tesla Direct Current Arc Lighting System
- Improvement in Unipolar Generators.

Part IV — Appendix on Early Phase Motors and the Tesla Oscillators

- Mr. Tesla's Personal Exhibit at the World's Fair
- The Tesla Mechanical and Electrical Oscillators.

NIKOLA TESLA

**Incredible inventions!
AC Power, High Voltage,
High Frequency,
Oil Condensers,
even magnet motors!**

by Thomas Commerford Martin
reprinted by Lindsay Publications Inc

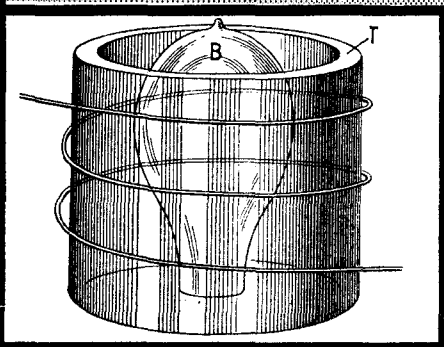
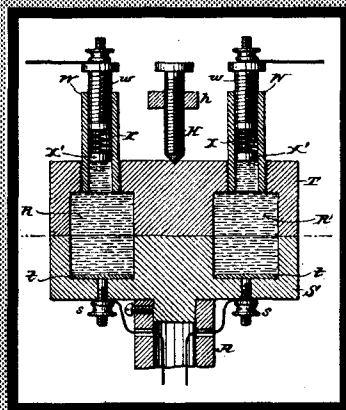
The greatest world's fair ever constructed was underway in Chicago in 1893. More electricity and more electric lights were used in the fair than in the entire city of Chicago. It was the electric age, and Edison was doing with commercial battle with Westinghouse and its star, Nikola Tesla.

In 1893, this volume, a comprehensive collection of Tesla's work to that point, was published. And although it is now quite rare, you can have a high quality reprint for a small fraction of what cost us to obtain an original copy.

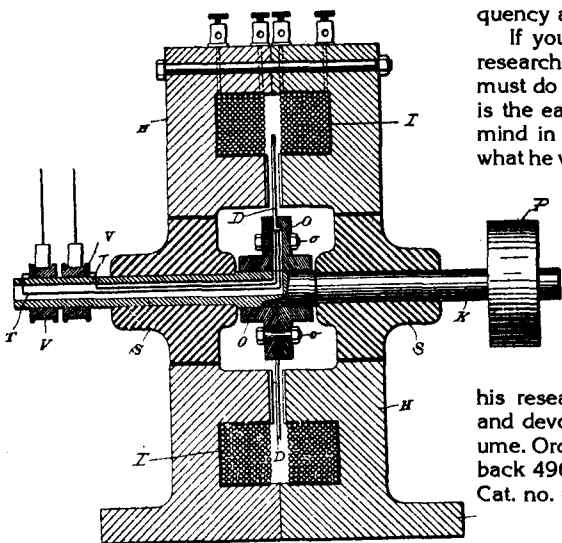
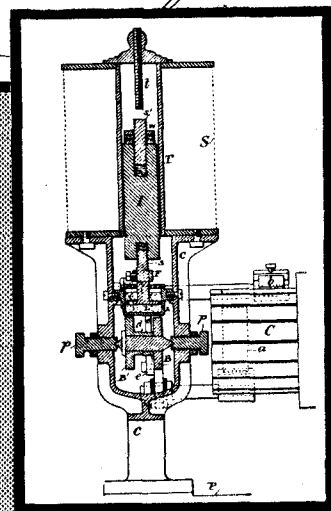
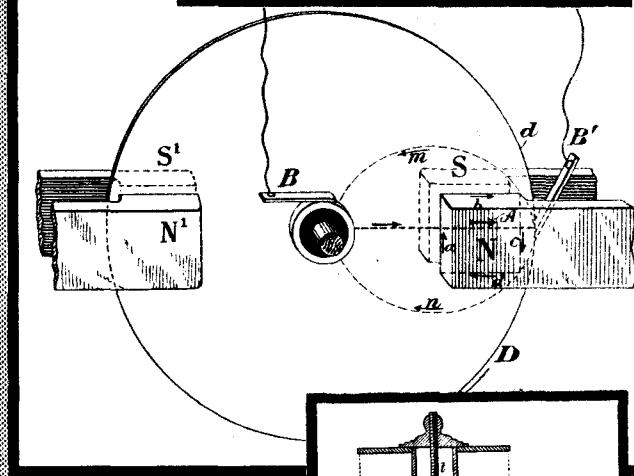
Most people think of lightning generators when they think of Tesla, but that's a very narrow perspective. People should think of alternating current. Tesla created the power system used throughout the world today — one that operates at 50 and 60 cycles per second.

Tesla experimented with other frequencies, iron and air core transformers, as well as motors and generators. Tesla didn't just one day decide he was going to build his famous lightning bolt generator. It was but another step in a series of experiments that had begun years before. Here you get a complete record of this research up to 1893.

It's all here — the AC experiments and inventions that lead Tesla to experiment with ever higher voltages and frequencies, the neon




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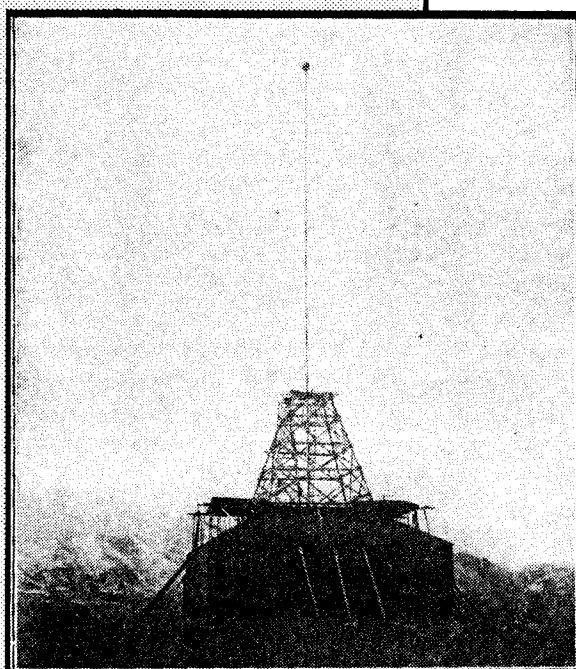
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Tesla's Experiments with Alternate Currents!

Power transmission without wires: the London Lecture plus a 1904 magazine article on the Colorado Springs experiments! Rare book!



Experimental Laboratory, Colorado Springs.

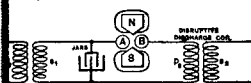
EXPERIMENTS WITH ALTERNATE CURRENTS of High Potential & High Frequency by Nikola Tesla

"A lecture delivered before the institution of electrical engineers, London, by Nikola Tesla with an appendix by the same author on the transmission of electric energy without wire, reviewing his recent work, and presenting illustrations from the photographs never before published".

Quite a title! Quite a book! There's so much written and published about Tesla (and too much of it is pure garbage), that it is refreshing to have the inventor himself explain his experiments, theories, and plans. It's all here, every page from the original 1904 book — complete with unusual illustrations showing disruptive discharge coils, improved discharger and magnet, luminous discs, single wire and no wire motor, unusual electric lights for use with the high-frequency AC that is generated by the Tesla coil, and much more.

The last fourteen pages of the book is a reprint of Tesla's article from the March 5, 1904 issue of "Electrical World and Engineer" complete with photographs of the experimental apparatus at Colorado Springs and Long Island built to test the transmission of electrical power without wires.

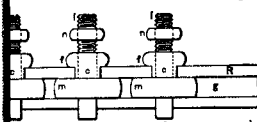
ection indicated diagrammatically in Fig. 5, the currents forming the arc are much more the magnetic field exercises a greater influence of the magnet permits, however, of the used by a vacuum tube, but I have encountered



MENT WITH LOW-FREQUENCY ALTERNATE AND IMPROVED DISCHARGER. .

Hiculties in working with an exhausted

n of discharger used in these and similar indicated in Figs. 6 and 7. It consists of a pieces c c (Fig. 6), each of which comprises



DISCHARGER WITH MULTIPLE GAPS.

ble portion m with an extension e below— used to fasten the piece in a lathe when discharging surface—and a column above, of a knurled flange f surmounted by a carrying a nut n, by means of which a

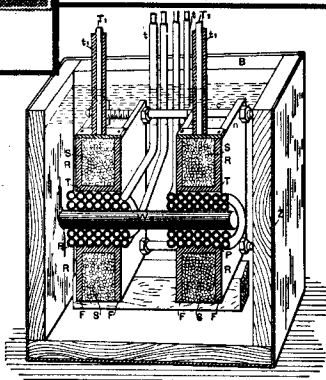


FIG. 3.—DISRUPTIVE DISCHARGE COIL.

coil and other apparatus used in the experiments with the disruptive discharge this evening.

It is contained in a box B (Fig. 3) of thick boards of hard wood, covered on the outside with zinc sheet Z, which is

Anyone who studies Tesla, builds his coils, or wants to perfect the inventions that Tesla didn't have time to finish should have a copy of this book. The writings of Tesla himself should be the cornerstone of any Tesla library, and here is your chance to get your own copy of this now-rare book. Interesting reading. Historically important. Get a copy.

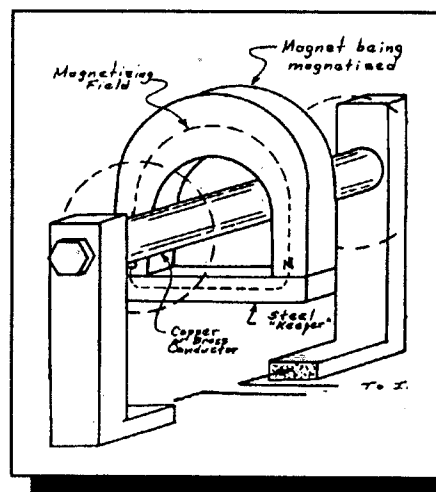
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You get all kinds of information and making, testing and using magnets from a circuit diagram for a 100 joule impulse magnetizer to suggestions for use in magnetic drives, motors and magnetos, magnetic welding benches and much more.

Expensive! But the best book of its type I've ever seen. Just the right mix of theory and practical application. Rare information. If you think you'll ever need it, get it now. It went out of print once, and is being reprinted (probably only for a short time) by another small publisher. I'm glad to see it's back. 9x12 hardcover 443 pages heavily illustrated

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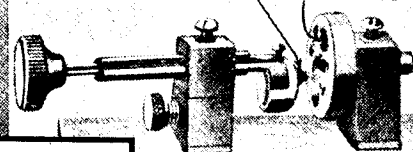
You get theoretical
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measure capacity, and much more.

You get the very best articles from this
two year span, and by best we mean plans

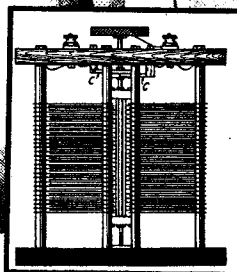
You should know that most of the photographs in this book are not of the best
quality. Poor originals, yellowed paper, oversized pages have combined to
make the photographs "muddy". The drawings are very sharp, and most type
is quite readable, but the photos leave something to be desired. All we can say
is that we did the best job we could. See what you think.

PERIKON DETECTOR

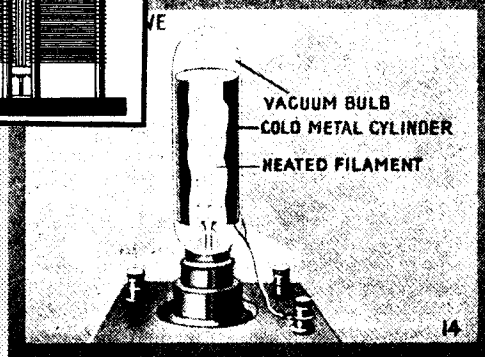
COPPER PYRITES
ZINCITE CRYSTALS



11



VACUUM BULB
COLD METAL CYLINDER
HEATED FILAMENT

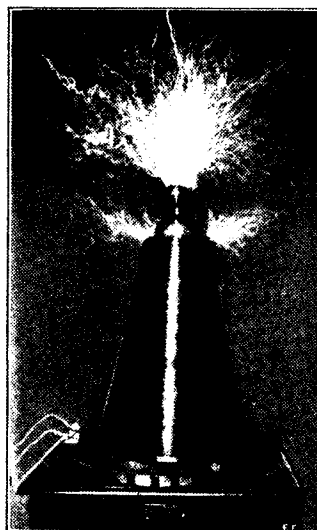


14

and information that is very difficult to
find today. Many articles that cover the
basics of electricity were omitted because
you can find comparable material in
modern magazines. Some plans were
omitted because they were not unusual
enough, such as motor and dynamo
plans. You can find
such plans in many
old books.

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THE PERPETUAL MOTION MYSTERY

by R. A. Ford

Perpetual motion. Some people laugh at it. Others take it very seriously. Here's a serious look at these unusual systems.

First, you get a reprint of the small and now-rare "Perpetual Motion Handbook Through Entropy Reversal" published in 1967 by I. R. Barrows. Then, you get his first (and last) four "Perpetual Motion Journals" published about the same time. Each is small but filled with letters patents, ideas, illustrations, and thought-provoking suggestions.

The author jumps into a discussion of why perpetual motion might be possible, pointing out unusual theories from the past, and pointing out possible defects in current theories.

Covered are kinetic gravitational theories of the 18th century, DesCarte's Vortex Theory, LeSage's Impact Theory of Gravity, and Brush's Wave Theory. Attempts at experimental confirmation of these theories are then provided.

Natural gravitational anomalies such as solar eclipse, bulging river surfaces, bore at sea, unusual rock movements, slowly falling hail are revealed. You'll learn about Robert Cook's inertial propulsion device and its relation to Newton's Law.

The last large section covers the Orffyreus wheel built in Germany centuries ago. The author believes it might have been the only real perpetual motion machine yet invented, the secret of which was lost. You'll learn about the inventor's life, his education, his wheels, his

Perpetual Motion Mystery

A Serious Inquiry into PM!

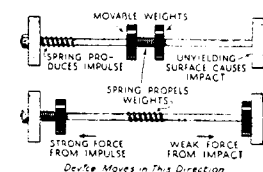
successes and failures, the tests, and more.

Last, the author, based on the material presented in earlier chapters suggests how a perpetual motion machine might be built.

You get a collection of strange, rarely seen stories and phenomena that might hold the key to perpetual motion, if, indeed, such a machine can be built.

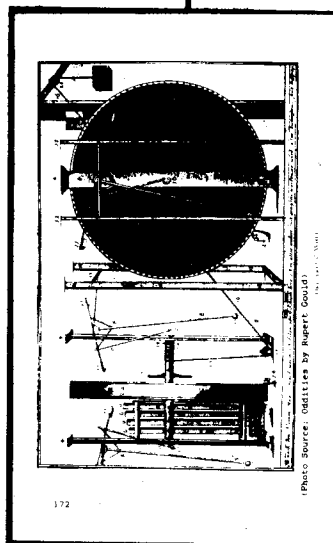
This is not a construction manual, nor is it extremely complex. It's a notebook gathered over the years, one that should be interesting to believers and non-believers.

Consider it. You won't find anything quite like it on the market. Different. Unusual. Interesting reading. Get a copy. 5 1/2 x 8 1/2 paperback 196 pages Cat. no. 4538 \$9.95



(Source: Popular Science, Vol. 126, 1935)

In this reaction motor, we see that the net force was the difference between an impact and an impulse action. Apparently the inventor's device was not taken seriously when it appeared back in 1935 and no U.S. patent was issued.



Syracuse, N. Y., inventor, (reprint) model of his reaction which he hopes to power a will, apparently, defy the power is shut off the cone coincide. Weights in operated by electromagnets

PERPETUAL MOTION HISTORY

PERPETUAL MOTION

The History of an Obsession

by Arthur Ord-Hume

People for centuries have attempted to build a machine that will produce more energy than it consumes. And they've all failed.

If you think you've invented a new type of perpetual motion machine, you had better read this book. Chances are, it has already been attempted.

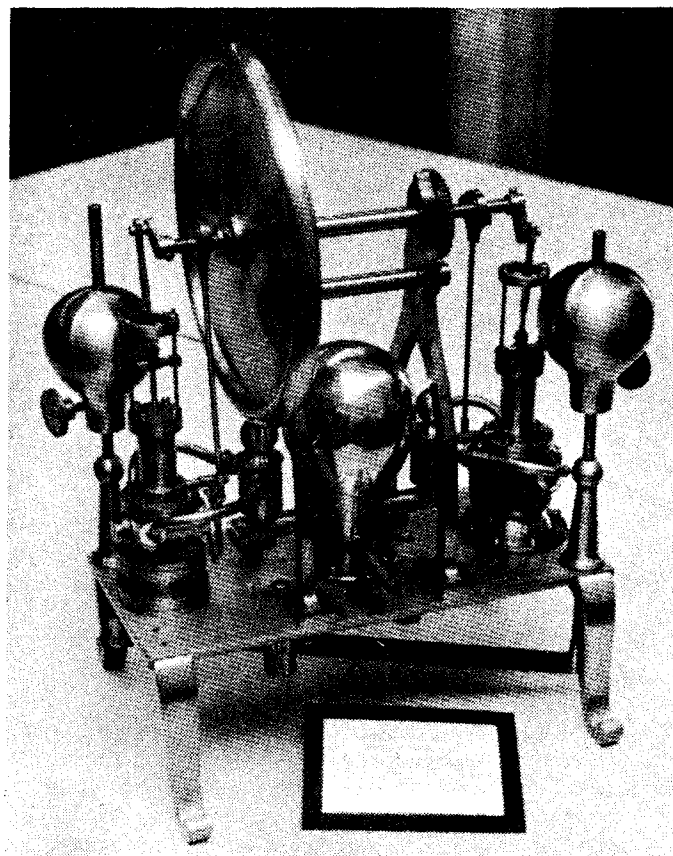
For the rest of us, this book is interesting reading. There are some machines, that don't actually produce energy, but they run seemingly forever on a small amount of energy, like Singer's perpetual chime that was set up in 1840 and is still operating!

Learn about medieval ma-

chines, self-moving wheels, lodestones, electromagnetism, steam, capillary attraction, spongewheels, Cox's machine, the Redheffer device, the Keely motor, odd ideas about vaporization and liquification, the barring of perpetual motion devices from the patent office (although the magnet motor sneaked in), rolling ball clocks, and more. You get lots of illustrations, and an excellent list of references for further reading.

Interesting book! Well written and researched. Excellently done. If nothing else, put one in your reference library. It's not all that expensive. 5 1/2 x 8 1/2 paperback 235 pages.

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A Very Strange Letter!

Is this for real? Should we publish something like this? What do you think?

About a year ago I received a letter from someone calling himself Cass Tubbs. I don't know if this is a real person or not (we have no such person on our mailing list), nor am I sure that I want to believe the story he tells. But it sure is interesting.

Apparently Tubbs is an amateur researcher/author who is attempting to track down suppressed or forgotten inventions and processes not unlike the infamous gasoline pill, overunity power generators, flying saucers and others.

I'm very much a skeptic when it comes all this "nonsense", but what Tubbs describes in his letter interests even me. His discoveries sound like they'd make a great book, but it costs big money to publish books. Do you think this kind of stuff is worth publishing? Is it for real?

We wrote Tubbs shortly after we received his first letter. After almost a year, he finally responded. He is obviously pretty slow in getting the research done. If you would like to see more of this kind of thing send a postcard to Cass Tubbs in care of Lindsay Publications and we'll forward it to him. Perhaps if he thinks enough people are interested, he'll put a little more energy into writing a book.

I wonder if we don't have some hallucinating waco here who is just having fun with us. On the other hand, maybe this stuff is genuine. And what are these "Skaylings", anyway? A bunch of bloody leprechauns? Is this strange or what?

I'm not into publishing fiction, but if enough people are interested in this kind of thing, I'll publish it anyway. That's my job regardless of I believe in it or not.

You decide. If you're interested, drop us a post card. Maybe we can encourage Tubbs (or whoever he is) to write a little faster.

Lindsay

Dear Mr Lindsay:

I have begun the editing and transcribing of Olaus Jon Roligsson's notebooks. They are on old, scratched microfilm and the pages show signs of fire damage.

Roligsson, as you know was a savant with little formal education. He wrote about his somewhat impressionistic ideas about the nature of the universe and the laws and forces controlling it in a very eccentric style using many alphabet characters of his own invention.

During the late 1930's and early 40's, Roligsson spent most of his free time at the University of Chicago library. He struck up a friendship with Gustavus Klaiss, a graduate student, who introduced Roligsson to members of the faculty. Klaiss, many years later, wrote a short biography of Roligsson for an author, who was doing research on the Manhattan project.

By 1941 Roligsson was a fixture on the university campus. Many students thought he was a faculty member. He often gave impromptu lectures on the steps of the library, and would carry on long rambling conversations with professors as he followed them about between classes. He was a compulsive talker, a chain smoker. Generally he was regarded as a harmless eccentric, likable, but resorting to sarcasm and invective when his ideas were challenged. Occasionally Roligsson would be invited to private parties where he drank heavily and argued his theories far into the night. Perhaps to offset his small stature, Roligsson used a long ivory cigarette holder for smoking and as his enthusiasm for his subject became heated he would punctuate his lecture with jabs and thrusts of the holder. Upon making a successful assault on some hallowed prescript of orthodox science, Roligsson would clamp the holder between his teeth and grin triumphantly in his patent imitation of President Roosevelt, whom he greatly

By now plans for Fermi's work at the metallurgical Laboratory on campus were well underway. The FBI and the Army Intelligence Service ran checks on a number of people, Roligsson came under surveillance.

By the summer of 1942 many members of the Metallurgist team were settling in at the University. The Arthur Comptons (Prof. Arthur H. Compton had the over-all direction of the nuclear research program at the U. of C.) would give parties for new arrivals. Compton instructed his colleagues not to mix with regular faculty and limit their social life to members of the project. Roligsson turned up at one of these parties where he was introduced to Fermi. Klaiss writes that this meeting was arranged by Leo Szilard as a joke. Compton was amused, and stood by ready to censor any errant conversations. But as the evening wore on, Compton became involved in a tedious conversation with George Weil and Roligsson button holed Fermi and regaled him with his pet theories. Klaiss was not there but was told by Thomas Brill that at first Fermi listened good naturedly to this chain smoking little gnome. He told Fermi that he could tell him how to build a machine that would make travel to any place in the universe possible in an instant. He pulled out a slide rule and a pad of paper, and began demonstrating in mathematical terms how this machine would operate and formulated his ideas in a strange script that resembled cuneiform. Although the formulae were unreadable by Fermi, what Roligsson was saying was not. Brill said that Fermi became very tense. He asked Roligsson a few pointed questions about where he had gotten these formulae. Roligsson was by now pretty drunk and became abusive. He accused Fermi of having a gestapo mentality. Fermi snatched the pad out of Roligsson's hand, tore off the page with the formulae and stuffed it into his pocket. Roligsson's outrage rendered him speechless—probably for the first time in his life. Then he suddenly was overcome with a fit of laughter and literally rolled on the floor. Compton, now aware that Szilard had invited Roligsson, told Szilard to get him out of there.

A few days later Roligsson told Klaiss that he regretted his confrontation with Fermi. Actually he had wanted to enlist Fermi's aid, a partnership, because he

saw Fermi as someone who could turn his theoretical machines into reality. But he knew Fermi recognized his true genius.

Roligsson was not invited to anymore parties. For a month or two he sulked, staying in his apartment on the outskirts of Hyde Park, apparently filling his notebooks with detailed descriptions of his ideas.

Did Roligsson have some specific knowledge of what the Manhattan Project was all about? Brill told Klaiss at a much later time that Roligsson had described to Fermi that evening a controlled atomic fission experiment far more advanced than any the Manhattan brain trust had ever envisioned.

Of course, from the moment when Fermi snatched the formulae from Roligsson, Roligsson was a marked man. The cuneiform characters defied interpretation. The FBI put four full time agents on Roligsson's trail. Fermi wanted the "shrimp" picked up immediately. Hoover sent down a wait-and-see memo in hope of catching bigger fish, since he was now convinced Roligsson was part of a sabotage plot. This was based on an agent's interview of Klaiss. Klaiss said Roligsson often mentioned "the Skaylings" as confidants. No one by the name of Skaylings could be found and it was assumed this was some code name. Klaiss later determined the name was actually "Skrellings", which he said was a Scandinavian term for "barbarians", applied by early Norse explorers to Native Americans.

Skrellings are mentioned in Roligsson's journal, of which I shall write later. I don't think Roligsson was referring to the American Indians, however. In one not totally understandable entry he writes: "I'm afraid of the Skaylings(sic) ... they come to the beach at night and hide in the water." Since Roligsson was a heavy drinker, his "Skaylings" may have been some species of pink elephant.

It's unfortunate the FBI didn't immediately pick up Roligsson. Even though an agent was camped in front of his apartment house night and day they failed to prevent his death. On a winter morning in 1943, smoke was seen filtering out from his apartment window. It was assumed Roligsson had fallen into a drunken stupor while smoking the previous evening. The fire smoldered all night. There wasn't much left of Roligsson's body.

All of Roligsson's belongings were taken to an FBI lab. Nearly everything had been charred and many notebooks turned to ashes. The journal he kept, having heavy covers, survived pretty much intact. The investigation went on long after the war ended. Fortunately the surviving books and journal were microfilmed because of their fragile condition. Many of the notebooks were written on cheap war time paper and fell apart as they were being photographed.

I'm am working from copies of those old microfilms. The original material no longer exists. These microfilms were first given to a physicist who helped the FBI in its investigation. After they were declassified, the microfilm was given by the physicist to a relative and he in turn gave them to my author friend. This author wanted no part of the microfilm or the Roligsson story. He believes the whole thing is a hoax concocted by Army Intelligence to divert the FBI from encroaching on their territory. He told me he had seen a copy of the autopsy report on Roligsson. It said the body had been reduced to cinders and no identification was possible. He had been told the interior of the room looked as if someone had taken a flamethrower to it. No other part of the building was touched. He also gave me a copy of the handwritten sketch of Roligsson by Klaiss.

More later ...

Sincerely
Cass Tubbs

WITCHES & WITCH HUNTING



THE MALLEUS MALEFICARUM
of Heinrich Kramer and James Sprenger
translated by Rev Montague Summers
The copy from the back cover says it better than I can:

"For nearly three centuries *Malleus Maleficarum* (*The Witches Hammer*) was the professional manual for witch hunters. This work by two of the most famous Inquisitors of the age is still a document of the force that era's beliefs. Under a Bull of Pope Innocent VIII, Kramer and Sprenger exposed the heresy of those who did not believe in witches and set forth the proper order of the world with devils, witches, and will of God. Even if you do not believe in witchcraft, the world of 1484 did.

Contemporary cases illustrate methods by which witches attempt to control and subvert the world: How and why women roast their first-born male child: the confession of how to raise a tempest by a washwoman suspended 'hardly clear of the ground' by her thumbs; methods of making a formal pact with the Devil; how witches deprive men of their vital member; and many others. Methods of destroying and curing witchcraft, such as remedies against incubus and succubus devils, are exemplified and weighed by the authors. Formal rules for initiating a process of justice are set down: how it should be conducted and the method of pronouncing sentence; when to use the trial by the red-hot iron; how the prosecutor should protect himself; how the body is to be shaved and searched for tokens and amulets, including those sewn under the skin....

Unabridged republications of the 1928 edition...."

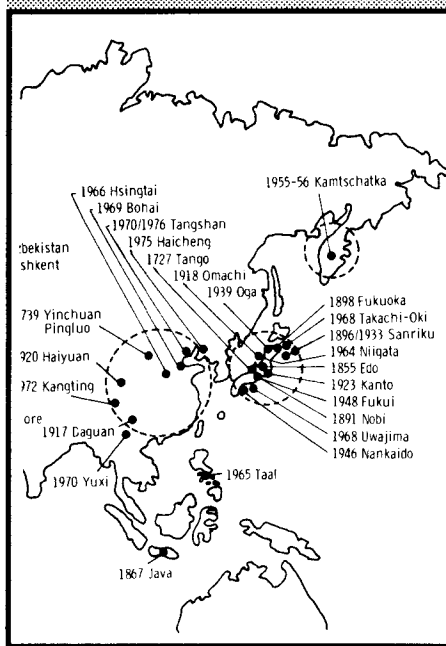
If you believe in this sort of stuff, you'll find it scary, and I DO NOT RECOMMEND that you conduct a witch hunt in your neighborhood.

For the rest of us, this is really interesting reading. Flat out bizarre! This book makes every day of the year Halloween!

Get a copy of this. EVERY man should have a copy this so he can protect his vital member against witches. (Reminds me of one my old girlfriends. But that's another story....) Excellent book. Very unusual. Order a copy. 6 1/2 x 10 paperback 278 pages
Cat. no. 754

\$7.50

WHEN SNAKES AWAKE!



WHEN THE SNAKES AWAKE
Animals & Earthquake Prediction
by Helmut Tributsch

From the back cover: "Two days before an earthquake struck Helice, Greece, in 373 BC, snakes, weasels, and worms deserted the city. Minutes before the Naples quake of 1805, oxen, sheep, dogs, and geese cried out in unison. A herd of horses tore loose and ran off in panic just prior to the San Francisco earthquake of 1906.

Helmut Tributsch, Professor of Physical Chemistry at the Free University of Berlin, visited his native village of Friuli shortly after it had been devastated by an earthquake in 1976. He was intrigued by the stories told by his old friends about their animals' strange behavior in the hours before the quake. This experience started Tributsch on a search through ancient and modern literature for stories relating animal behavior and the appearance of such phenomena as luminosity, clouded springs, and strange fogs to the onset of earthquakes. This book summarizes his findings and presents a plausible explanation for them. Tributsch urges Western scientists to follow the lead of their Chinese colleagues and learn to use these signs as a possible key to the prediction of natural disasters."

This is really an interesting book published by MIT covering 78 earthquakes from 373 BC to 1979 and the unusual phenomena that accompanied them. Not only is it interesting reading, but researches into the fringes of science will find the tables in the appendices quite useful.

Unusual. Reliable. I think you'll like it. 6x9 paperback 248 pages
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READ PALMS



HOW TO READ HANDS
A Step-by-Step Guide to
Modern Hand Analysis

by Lori Reid

Next time you go buy a car, don't shake the salesman's hand. Instead, grab it and use this book to examine it to see if you can trust him or not. You might be in for a shock!

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By studying the shape of the hand, the skin markings, gestures and the lines, a detailed picture is built up of the subject's character and inner drives.

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GHOSTS!

Photo-graph Ghosts!

Images from Beyond the Spectrum



PHOTOGRAPHING THE SPIRIT WORLD
Images from Beyond the Spectrum
by Cyril Permutt

Instead of whipping out the usual vacation pictures and boring your friends half to death, lay some honest-to-goodness ghost pictures on them that you can brag you took yourself!

I don't know if I want to even believe this book, but I can't deny that is an interesting concept. Strange images have been known to turn up on negatives. Most are explained, but a few are not. Are they ghost pictures?

From the back cover: "Do the dead appear to be living? Is it possible to move objects merely by the power of thought? Can thought waves produce images on photographic film? Cyril Permutt believes he has collected a wealth of photographic evidence which supports the existence of these phenomena and many more besides. Ever since the invention of photography it has proved to be a valuable tool in the search for the supernatural and, despite the ef-



forts of frauds, swindlers and over-sceptical scientists, a large number of genuine cases have been recorded which are impossible to explain except as real instances of supernatural at work. Here Mr. Permutt presents his evidence and leaves the reader to decide for himself."

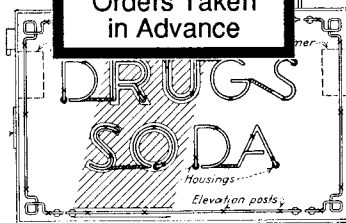
Chapters include psychic photography, photographing physical phenomena, modern supernatural photography, the Chelmsford photograph, thoughtography, beyond the spectrum, and what are supernatural photographs.

Whether you believe in this kind of thing or not, you'll marvel at many bizarre photos and unexplained events revealed. Very strange book for very strange people (in other words, you and me)! Consider this book carefully for your fringe science library. 6 1/2 x 9 1/2 paperback 186 pages Cat. no. 758 \$12.95

NEON SIGNS

NEW!

Available on or about
January 15, 1990
Orders Taken in Advance



NEON SIGNS

by Miller & Fink
reprinted by Lindsay Publications

Sure. Equipment, techniques, and sign design have changed since this book first appeared in 1935, but not all that much.

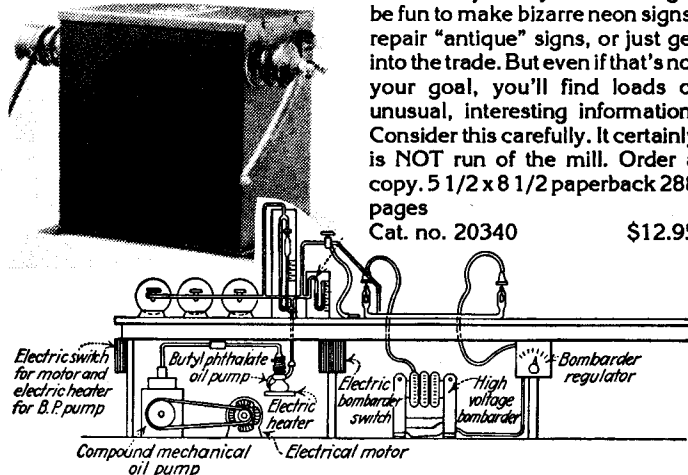
Even if you're not interested in making neon signs, you'll find loads of useful information on rare gases, glass blowing, and vacuum systems that could be useful in experimental physics, high voltage, or even in building your own experimental vacuum tubes!

Chapters include the luminous tube, materials, electrical equipment, types of signs, designing the sign, glass bending, pumping systems, bombarding, filling, testing, aging, installation equipment, special applications, tricks of the trade and more!

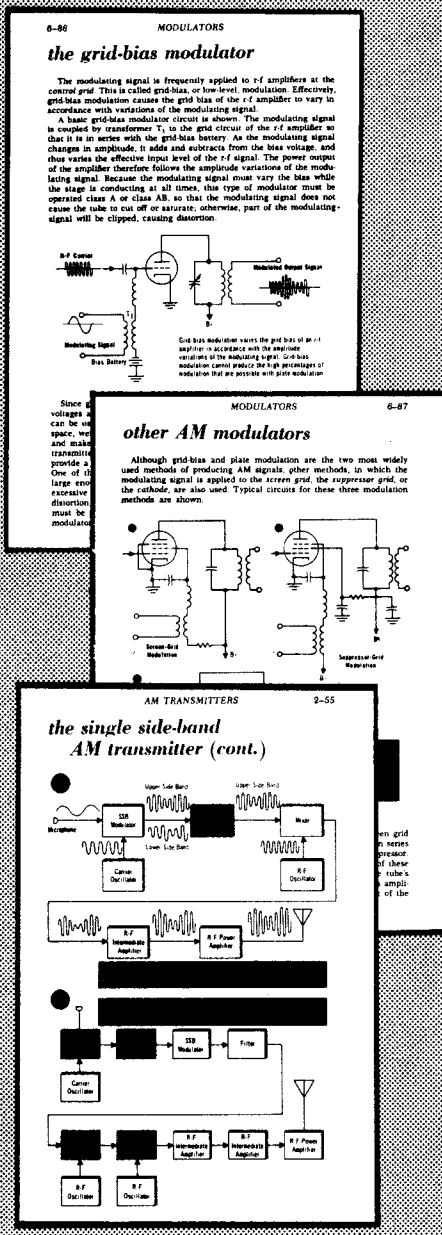
Great How-To on Glass Blowing, Vacuum Systems, High Voltage and more from 1935!



This is a quality straight-to-the-point book loaded with diagrams and photographs that you won't find just anywhere. It might be fun to make bizarre neon signs, repair "antique" signs, or just get into the trade. But even if that's not your goal, you'll find loads of unusual, interesting information. Consider this carefully. It certainly is NOT run of the mill. Order a copy. 5 1/2 x 8 1/2 paperback 288 pages Cat. no. 20340 \$12.95



Incredible Electronics Textbook!



ELECTRONICS 1-7 2nd Edition
edited by Harry Mileaf

I've seen a thousand electronics books from the oldest to the newest, and in my opinion, this one of the very best I've seen. If you're new to electronics or just need a great reference for those areas in which your knowledge is weak, then this book is for you.

What I like is the simply written, yet detailed and complete text and the clear informative illustrations that drive home the lessons being taught. Some books race through complex topics and don't really explain themselves.

You'll find almost everything!

DC signals
AC signals
modulation
side bands
side-band modulation
AM
FM
pulse modulation
multiplexing
television
stereo FM
navigation signals
facsimile
mixing frequencies
waveshaping
harmonics
power supplies
amplifiers
modulators
demodulators
limiter
separator
AFC circuits
AGC circuits
counters
gates
traps
feedback circuits
AM transmitters & rcvrs
FM transmitters & rcvrs
UHF rcvrs
RDF finders
vacuum tubes
diodes
triodes
triode operation
load lines
bias tetrodes
pentodes
phototubes

magnetrons
klystrons
semiconductor theory
PN diode
junction capacitance
zener diodes
tunnel diodes
junction transistors
gain
transistor circuits
bias & stabilization
oscillation
frequency response
thyristors
field-effect transistors
FET circuits
integrated circuits
rectifiers
filters
load resistors
voltage dividers
voltage multipliers
phase splitters
RF amplifiers
frequency-multipliers
LC oscillators
crystal oscillators
RC sine-wave oscillators
relaxation oscillators
mixers
converters
discriminators
gating circuits
counters circuits
limiter circuits
antennas
and much, much MUCH more!

Not here! The authors take their time and really teach.

Originally, this book was issued as seven paperbacks, no doubt for schools. Here you get all seven books in a single hardcover volume. Yes, it's expensive, but it's cheaper than buying the individual volumes, and you definitely get your money's worth. The table of contents alone, is eighteen pages long!

This is not a how-to projects book. This is a textbook that teaches the electronic principles behind the equipment you buy and build. You'll learn the complex terms, how components work by themselves and together to build up complex systems.

Again, this one of the very best electronics course I've seen. If you need just one good electronics book then this is it. There are many other good ones on the market, but I'd put my money on this one any day. (I wish I had published it!) Great book. This should be on every electronics-buff's reference shelf. Order a copy! 6x9 hardcover almost 1000 pages wall-to-wall illustrations

Cat. no. 363

\$42.95

Unusual Science Beliefs Attacked...

MARTIN GARDNER

Fads & Fallacies

IN THE NAME OF SCIENCE
THE CURIOUS THEORIES OF MODERN
PSEUDOSCIENTISTS AND THE STRANGE, AMUSING
AND ALARMING CULTS THAT SURROUND THEM.
A STUDY IN HUMAN GULLIBILITY

L. RON HUBBARD

PSIONICS MACHINES

FLYING SAUCERS

WILHELM REICH

DR. W. H. BATES

ALFRED KORZYBSKI

ATLANTIS

EGGENTRIC SEXUAL THEORIES

BRIDEY MURPHY

FADS & FALLACIES

In the Name of Science

by Martin Gardner

If you find "Fringe Science" impossible to believe, you'll find this book right down your alley. Gardner presents his views on "the curious theories of modern pseudoscientists and the strange, amusing and alarming cults that surround them. A study in human gullibility."

Gardner tears apart Symmes and his hollow earth theory, Velikovsky and wandering planets, the multiple moon theories of Horbiger & Bellamy, Charles Fort and the Fortean society, dowsing and other strange methods of finding natural resources, naturopathy, iridagnosis, zone therapy, food fads, orgone sex energy by William Reich, L. Ron Hubbard and dianetics, Koryzbski and his General Semantics, Atlantis, flying saucers, and Bridey Murphy.

Gardner shoots them down, and many of them deserve it. But whether you agree with Gardner or not is immaterial. Here, you'll read about many strange ideas for the first time. You can read Gardner's point of view and then do your own research and decide whether you want to agree with him. What I especially like is the appendix that lists many unusual articles and books along with fascinating footnotes.

In other words, Gardner may attack something you really believe in, but in doing so might very well provide you with new directions for your own investigations.

No matter what side of the fence you're on, you'll enjoy this. Wall-to-wall unusual material. A lot of interesting book for the money. You can't afford NOT to have a copy. 5 1/2 x 8 1/2 paperback 363 pages

Cat. no. 737

\$5.95

Video Scrambling Secrets!

VIDEO SCRAMBLING & DE-SCRAMBLING
for Satellite & Cable TV
by Graf & Sheets

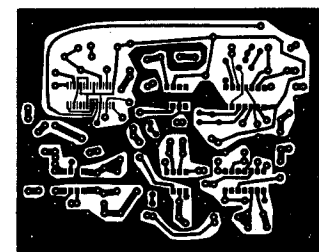
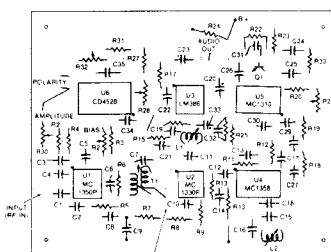
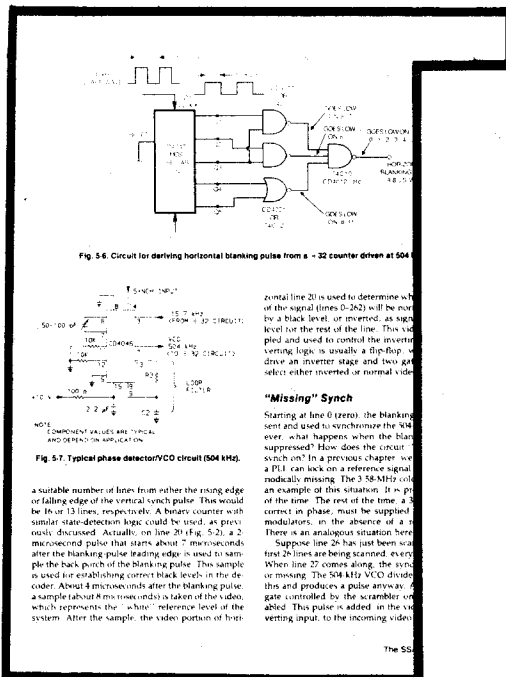
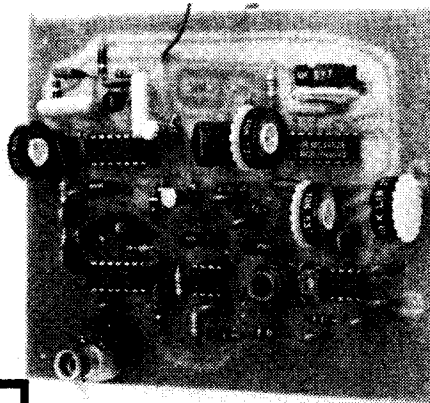
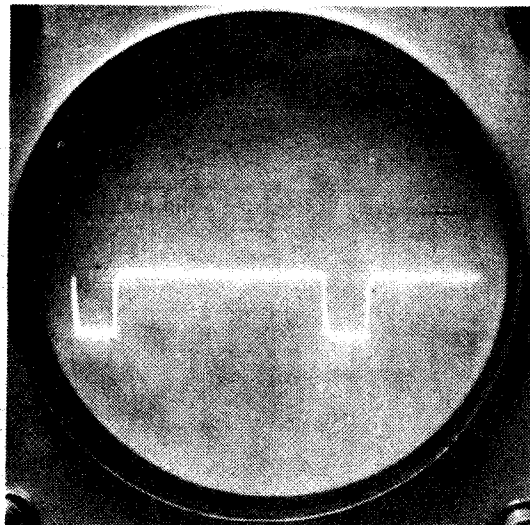
If you have purchased or plan to purchase a satellite dish to capture signals coming from the many Earth-orbiting satellites, this book is for you.

You get:

- An understanding of encoding/decoding systems
- The theory and techniques of video encryption and decryption
- An overview of the rules and regulations governing the availability and use of satellite signals, antennas, and programming materials
- Schematics and details for several encoder and decoder projects.

Originally published in 1987, this book provides detailed information on everything from simple cable encryption systems to commercial satellite systems such as VideoCipher II™, the B-Mac System, and even the Data Encryption standard.

Although the authors are quick to point out that the information is not to be misused in theft of signal, they have provided a wealth of schematics, printed circuit board layouts, IC chip specs, patent reprints, list of satellites and the scrambling systems they use and much more. This is a quality master reference that any video/satellite fanatic will find useful. Order a copy today! 8 1/2 x 11 paperback 246 pages Cat. no. 370 \$19.95



72 Video Scrambling and Descrambling

DEATH BED VISIONS

DEATH BED VISIONS

by Sir William Barrett

This is a British book from "The Colin Wilson Library of the Paranormal".

From the back cover: "Visions of living friends and relatives seen by people at the moment of death... Music heard by the dying, and by those attending them... Visions of heaven and of deceased loved ones... The psychical experiences of the dying remain as puzzling — and as momentous in their implications — as ever."

Death-Bed Visions, first published in 1926, is a classic account of such experiences by one of the most distinguished early psychical researchers."

This is a fascinating collection of early death bed experiences dating back to the early 1800's. Although published in England, you'll find references to events in this country — even the story of a dying Civil War soldier.

If you like to investigate this kind of thing, you'll find this to be a valuable source of early material. There have been a number of books published on near-death visions and the like, but this is early material that you don't often see.

Interesting. Unusual. Consider it. Sorry, no pictures! 5 1/2 x 8 1/2 paperback 174 pages Cat. no. 756 \$12.95

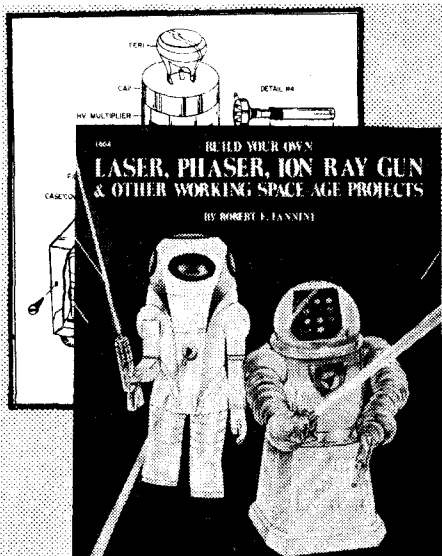
LINDSAY! HELP!

Help! The worst has happened. Just when I was about to order, my wife threw out your latest catalog. I'm keeping her in a room in the cellar until you send me a new one. Please hurry! Thank you. S.O.S.

Chris Bienick
Hamburg NY
P.S. Just kidding the about the cellar... really.

Chris: A new catalog is enclosed. But keep an eye on your wife. It's outrageous she threw out your catalog. Next thing you know, she'll expect us to regain our sanity... No way!

Lindsay



Strange Electronics Plans!

BUILD YOUR OWN LASER, PHASER, ION RAY GUN. . .

by Robert E. Lannini

Here's one of the most bizarre collections of how-to plans I have ever seen. You'll learn how to build high-power pulsed red ruby laser

- beginner's simulated laser
- visible red laser
- pulsed laser rifle
- ruby laser gun
- CO2 laser
- laser light detector
- plain field generator
- phaser shock-wave pistol
- ultrasonic generator
- ultrasonic listening device
- 250 kv Tesla Coil
- ion ray gun
- magnetic field distortion detector
- light-beam communicator
- solid-state Tesla coil
- infrared viewer
- FM voice transmitter
- long-range telephone xmtr
- parabolic microphone
- paralyzing device
- wireless repeater xmtr
- much, much more!

gun, high-power continuous IR CO2 Laser, ultrasonic field generator, programmable high-power ultrasonic generator, 250,000 volt Tesla coil, magnetic field distortion detector, solid-state Tesla coil, a variety of wireless "bugs", a super-sensitive parabolic microphone, electronic paralyzing device, battery charger and eliminator and much more.

Lannini is an experienced electronics inventor, and holds many patents. He'll give you parts lists, wiring diagrams, assembly diagrams and all you need to get these projects built. I don't think that

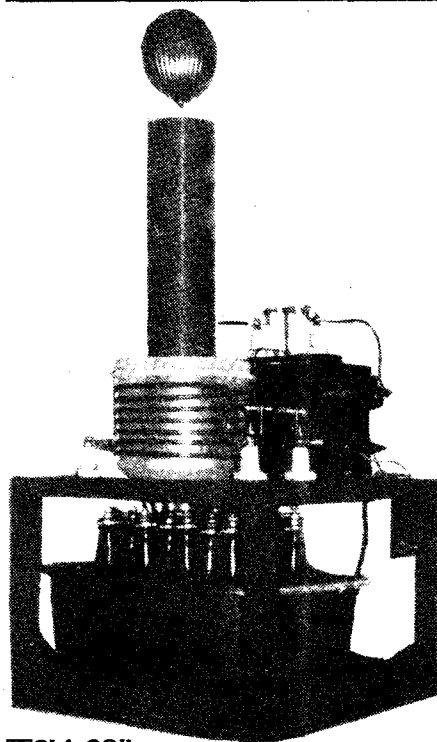
it's any coincidence that almost every plan has a footnote telling you that kits are available from Information Unlimited, Inc., which is owned by the author and which advertises in the back of the science and mechanics magazines. No doubt, that firm's best selling plans have been reprinted in this single volume.

This book is expensive, but it delivers. I really like this, and I'm sure you will too. Order a copy, even if it has to sit for two years on the shelf before you get ready to build. Excellent book. 8 x 9 1/2 paperback 390 pages.

Cat. No. 346

\$17.60

Build a TESLA COIL!



TESLA COIL

by George Trinkaus

Here's another Tesla coil book. It's a bit expensive for what you get, and much of it is a repeat, but there are some bits and pieces that I haven't seen.

You get a brief overview of Tesla, his career and his coil. Then you get instructions on building a good sized coil using a neon transformer and a spark gap to drive the primary. The detail is not great but is probably adequate.

You get brief discussions and details on capacitors, glass-and-foil capacitors, oil capacitors, salt-water capacitors, series and rotary spark gaps, a schematic for a 6L6 vacuum tube driven coil, construction notes, hazards, Tesla lighting, ozone disinfectant, and magnifying transmitter. All this in 21 pages!

Obviously, the booklet does not go into great detail, but there are ideas and clues here that you might not have thought of yet that might be worth the price and then some. You'll have to decide. Consider it carefully. 7 x 8 1/2 booklet 21 pages

Cat. no. 741

\$4.95

Space Energy RECEIVERS



SPACE ENERGY RECEIVERS

by Simplified Technology Service

"Space energy receivers... may be defined as a class of devices which apparently collect electrical energy from the surrounding space without applied force, by some process other than chemical or mechanical action..."

What? Pull energy out of thin air? That's what they claim. Do they work? At least a few were built to defraud gullible investors. BUT! There IS energy out there, and extracting it would be comparable to geothermal power. You're not creating energy, just tapping existing reserves.

Do the machines described here really work? Maybe. Maybe not. Whether you believe they do or not is of little importance because either way you'll find this interesting reading. You'll enjoy the photos, diagrams, and claims.

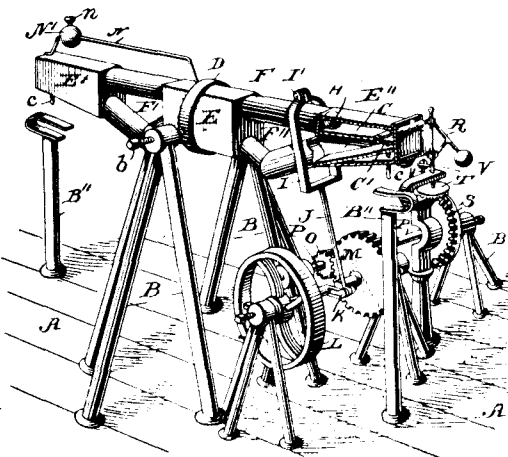
You'll learn about Tesla's patent, the Moray unit, the Yglesias machine, the Gustav Weise receiver, the Meyers machine, Hartwig's pendulum observations, Perrigo's fantastic machine seen in Congress, the Mushroom generator, and excerpts from a formerly classified British report on a world War II German machine, that is now declassified.

In addition, you get reference books to read, a list of experimenters, and other tidbits. It's quite interesting, and if there is one complaint I have, it's that "Receivers" is just not long enough. I think you'll like it. Very unusual! Order a copy. 8 1/2 x 11 booklet, 21 pages.

Cat. No. 882

\$4.50

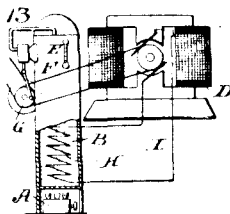
FIFTY Perpetual Motion Mechanisms



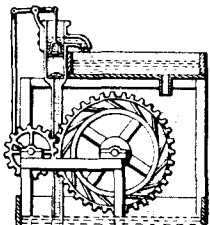
FIFTY PERPETUAL MOTION MECHANISMS

by Fred Dieterich
reprinted by Lindsay Publications

The author was a patent attorney at the turn of the century. I suppose that so many people considered themselves inventors and presented him with so many headaches that he wrote a book entitled "The Inventors Universal Educator" covering the process of securing a patent. It sold for many years starting 1899.



One short section of his book covers perpetual motion inventions which are unpatentable. Dieterich, who was outraged by claims of perpetual motion, presents drawings of 50 different mechanisms. No doubt, you've already seen a number of these, but others are unique, and all are interesting.



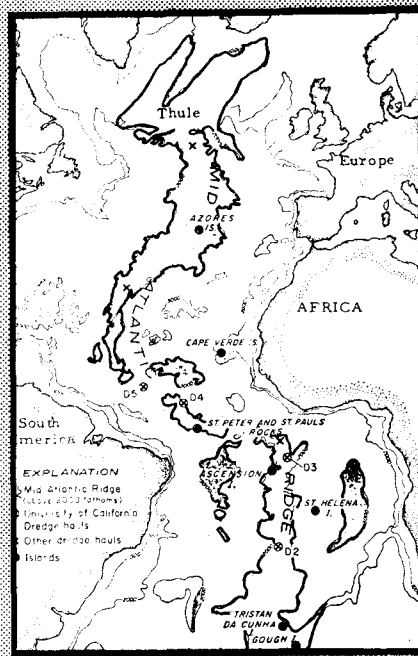
You'll see the Marquis of Worcester wheel, the Horace Wickham machine, the 1868 device of Dr. Drasch of Austria, an electric device, the self-moving railway, the Orfyreus 1720 wheel, a complicated water screw, and others.

If you're into PM, you'll want to add this to your collection. Maybe you're trying to build a machine and want to avoid previous failures. Or you're a skeptic and want a good laugh. Whatever, the material is interesting and the price is low. Get a copy. You'll like it. 8 1/2 x 5 1/2 booklet 22 pages
Cat. no. 898

\$3.75

MYSTERIES!

- Mind Control
- Atlantis
- UFO's
- Tesla
- Suppressed Inventions
- much more



ENIGMA FANTASTIQUE

by W. Gordon Allen

copyrighted by Tesla Radiation Inc.

"Why was only a small portion of Dr. Tesla's work permitted to be used by world industry? What were the incredible SECRETS of mind control demonstrated by the life of Nikola Tesla? What do the mind-control secrets of Dr. Tesla and Dr. Rudolf Steiner have in common? . . ."

This is another of those strange "revealing" books that declare they have all the answers to why certain inventions, ideas and developments are being "suppressed." You can laugh at it, or take it seriously. Your choice.

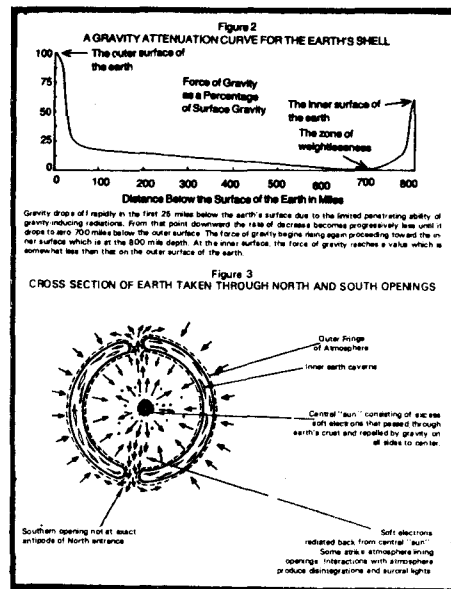
Whatever your point of view, you should find it interesting. You get descriptions of Tesla's ideas of power transfer, Dr. Rudolf Steiner and his strange ideas, Atlantis, UFO's, and a bunch of other things.

Under no circumstances do I endorse any of this. I offer it only as entertainment, science-fiction, if you like. Although that's my opinion, you may be convinced that it's fact. You decide.

Spiral bound, 197 page typewritten book with poorly reproduced photos. 8 1/2 x 11
Cat. No. 724

\$10.00

Strange New Explanation of the Universe!



THE AWESOME LIFE FORCE

by Joseph H. Cater

The author is one of those people who claims that the government, the pentagon, NASA, the science community and others are suppressing knowledge and telling us lies, and that he alone has solved all of the mysteries. Although I find that hard to believe, some of his arguments are interesting.

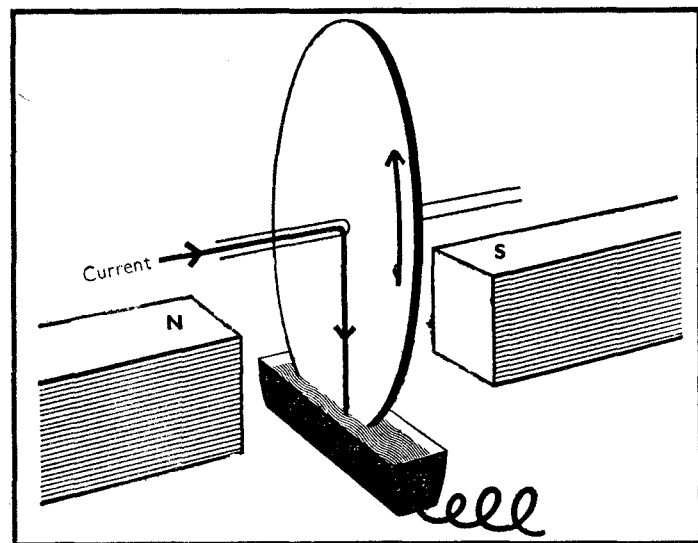
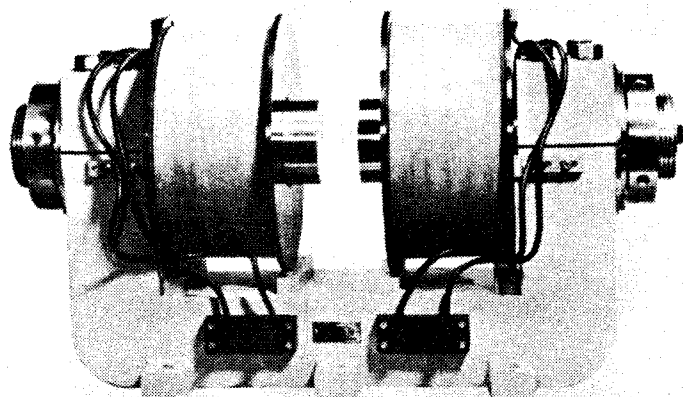
Chapters include: undeniable discrepancies in conventional science, cause of tides, the hollow condition of the earth, closer look at the properties of light, popular misconceptions of atomic and particle physics, practical free energy devices, the Searl effect and related UFO phenomema, research of Von Reichenback, pyramid of life, resolving the mystery of teleportation, materializations from higher realms, origin and transference of disease, and much more.

The author claims that there are holes at the north and south pole that go to the center of the earth. They've been seen and photographed by astronauts but are suppressed by NASA because they can't be explained.

If you believe in this sort of thing, you'll love this book. If you're trained in the sciences, you'll find many of his arguments border on the ridiculous. But regardless of what side of the fence you're on, you WILL find this interesting reading. It's as far out as any book I've seen yet. 5 1/2 x 8 1/2 paperback 475 + pages
Cat. no. 679

\$14.95

Introduction to MAGNETISM



MAGNETISM — An Introductory Survey
by E. W. Lee

The back cover of this book explains it all very well...

"The lodestone was known to the ancient Greeks; the Chinese knew of the compass a thousand years ago; in the 16th century Gilbert described magnetic poles. Professor Lee takes us through the early experiments to the first modern accomplishments of Oersted, Ampere and Faraday. We then learn the principles behind electric motors, dynamos, transformers, permanent magnets, synchrotrons, solenoids, memory banks in computers, betatrons, magnetic supercooling, and other modern applications..."

"The author shows us how magnetism 'works,' with reference to such concepts and principles as lines of force; ferromagnetism; the atomic theory of matter in relation to electromagnetism properties; paramagnetism and diamagnetism; quantitative measurement of magnetic force; domains and domain boundaries; high-permeability alloys, their theoretical basis and uses; magnetic matrices used as computer-age storage devices; ferromagnetism and antiferromagnetism; the use of magnetism in modern scientific research; and problems of the earth's magnetism, including its meaning to Wegener theory of continental drift and solar phenomena."

You get 60 diagrams and sketches and more than 32 pages of photographs. If you want to explore the theory, you can study the mathematics that explains magnetism.

This is one heck of a lot of book for the money. And it's must reading for basement engineers, experimenters, even the guy who's trying to build a magnetic motor or perpetual motion machine. Great background information. Order a copy. 5 1/2 x 8 1/2 paperback 281 pages Cat. no. 365 \$6.00

Great Electricity Text!

ELECTRICITY 1-7
edited by Harry Mileaf

Find *Electronics 1-7* in this catalog and read what we have to say about it. You'll know in an instant why we offer this companion book. It's every bit as good!

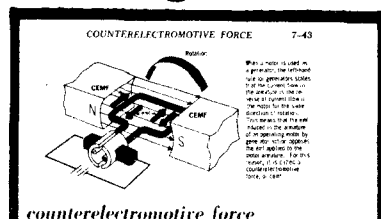
If you need a good solid understanding of electricity, the most basic electrical elements and how they work, then you should have this.

In this single hardcover volume you get the original seven paperback books produced to teach electricity in schools. The volumes cover basic concepts; resistance and Ohm's law; AC components such as capacitors, inductances, and transformers; solving problems in AC circuits such as LC, RC, and LCR arrangements; test equipment; power sources including primary & secondary batteries and generators and alternators; and finally AC & DC motors.

Every chapter is heavily illustrated and text is detailed, easy-to read and understand and thorough. Not all books can claim that!

This is an essential book for every electrician and for any one who needs a solid footing in electrical theory before advancing to the study of electronics.

Excellent written. I've offered this book off and on for years. It's great. Highly recommended.



counter-electromotive force

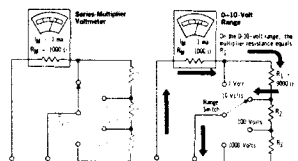
Generator action is always taking place in a rotating motor. As the armature of the motor turns, its conducting loops cut the magnetic flux lines of the field. These are the conditions for microcurrents, induction. Therefore, an emf is always being induced into the rotating motor armature during normal motor operation.

To understand the effects of this induced emf we will return to the single loop elementary d.c. motor. Current to start the armature turning flows in the direction determined by the applied emf. Immediately after

5-88 VOLTMETERS

calculating the resistance of multirange multipliers (cont.)

A second method of calculating the values of voltmeter multiplier resistors is the series multiplier arrangement in which the multiplier resistors are connected in series. As shown, R_1 is the multiplier resistor for the 0-10 volt range. For the 0-100 volt range, R_2 is in series with R_1 . Therefore, the value of the multiplier resistance for the 0-100 volt range is equal to R_1 plus R_2 . Similarly, the multiplier resistance for the 0-1000 volt range is equal to R_1 plus R_2 plus R_3 . By now, you probably realize that the series multiplier arrangement is similar to the shunt arrangement for current meters that you examined earlier.



Now, let's calculate the values for a series multiplier voltmeter. We will use the same 1 milliamperes (1000-ohm) meter movement that we used previously. Since this movement indicates 1 volt for a full-scale deflection, no multiplier resistor is needed for the 0-1 volt range. Therefore, your first step is to calculate the multiplier resistance needed for the 0-10 volt range. Again, using Ohm's Law, find the total resistance (R_{TOT}) needed to limit meter current (I_M) to 1 milliamperes at this range.

$R_{TOT} = E_{MAX} / I_M = 10 \text{ volts} / 0.001 \text{ ampere} = 10,000 \text{ ohms}$
Therefore, multiplier resistor R_1 for the 0-10 volt range equals 10,000 ohms minus the 1000-ohm meter resistance, or 9000 ohms. Thus far, the procedure is the same as in the other method, and the value of the multiplier resistor is the same for the 0-10-volt range.

Top Quality!

mended. Expensive, but it certainly delivers.

Get a copy for your library. 6x9 hardcover almost 1000 pages — wall-to-wall illustrations

Cat. no. 364 \$42.95

Just a few of the topics covered:

- | | | |
|--------------------------|--------------------------------|---------------------------|
| electrical charges | transformers | power meters |
| electron theory | capacitors | dry cells |
| current | capacitive AC circuits | storage batteries |
| magnetism | power factor | alkaline cells |
| electric circuits | capacitor types | battery characteristics |
| resistance | vectors | DC generators |
| resistors | RL circuits | field windings |
| power | RC circuits | armature windings |
| Ohm's law | LC circuits | DC generator construction |
| series circuits | LRC circuits | AC generators |
| parallel circuits | tuned circuits | output phases |
| series-parallel circuits | filter circuits | auto alternators |
| Thevenin's Theorem | impedance matching | motor-generators |
| Kirchoff's Laws | meter construction | dynamotors |
| DC circuit failures | rectifier meters | AC & DC motors |
| alternating current | meter calibration and accuracy | motor construction |
| AC waveforms | ammeters | motor classifications |
| resistance AC circuits | voltmeters | compound motors |
| inductance | ohmmeters | and on, and on, and on... |
| inductive DC circuits | the megger | |
| inductive AC circuits | | |

Experimental Physics

Procedures in EXPERIMENTAL PHYSICS

by John Storg
reprinted by Lindsay Publications

If you consider yourself an experimenter, an inventor, or a builder of unusual machines and equipment, you must have a copy of this fantastic classic text. No two ways about it.

You'll find wall-to-wall practical how-to and incredible illustrations on almost every one of the more than 600 pages. Chapters include: laboratory glass blowing, laboratory optical work, technique of high vacuum, coating of surfaces by evaporation and sputtering, the use of fused silica, electrometers and electroscopes, geiger counters, vacuum thermopiles and the measurement of radiant energy, optics, photoelectric cells and amplifiers, photography in the lab, heat and high temperature, notes on the materials of research, notes on the construction and design of instruments and apparatus, and molding and casting.

This is some incredible stuff! Learn how to blow glass and make aspirators, distillation condensers, and so on. Learn how to seal copper to glass so that you can imbed electrodes. This could be handy for trying to make light bulbs, vacuum tubes, or x-ray tubes maybe.

Learn how to rough cut lens blanks from large plates of glass and then grind them into lenses on your homebuilt lens grinder. Learn how to make a parabolic telescope mirror using the standard techniques. Learn to make unusual equipment to test the finished mirror. Learn how to grind a Schmidt lens.

To create high vacuum you'll read about roughing pumps, the vapor pressure of waxes, getters for creating the highest vacuums, and learn to make a variety of diffusion pumps using mercury and oil. See charcoal traps, kinetic vacuum systems, vacuum gauges of all types. Remember, all this comes with construction details.

Learn how to silver mirrors with a variety of methods including vacuum sputtering. You'll find extensive details on the evaporation technique for aluminum.

Fused quartz is valuable because unlike glass it can withstand extreme temperature changes without shattering. Learn how to build micromanipulators and all the rest of the equipment to produce tiny fibers that can be used for suspending the elements of an electrometer, for cross hairs in optical instruments, or for building a balance. The microbalance shown is supposed to be sensitive down to a billionth of a gram per division!

And there's so much more! Build a Compton adjustable quadrant electrometer, a Hoffman electrometer, and others useful for x-ray and cosmic ray work. Build a Geiger counter. You can build your own Geiger-Mueller tube if you master the high-vacuum technique taught earlier. Unfortunately, most of the electronics described is

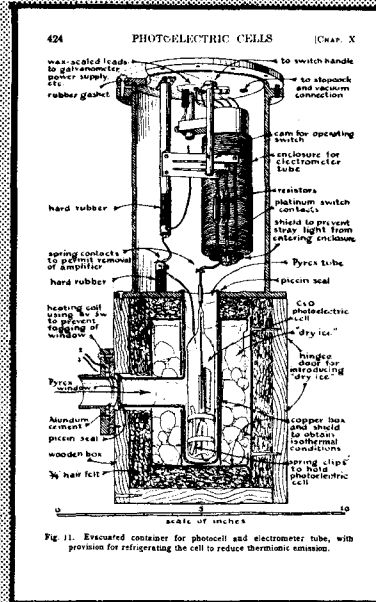
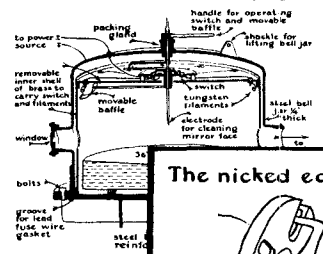


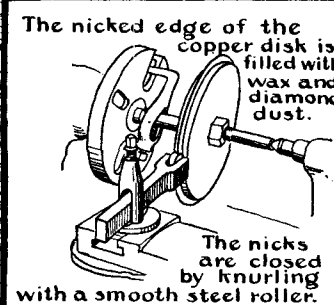
Fig. 11. Evacuated container for photoelectric cell and electrometer tube, with provision for refrigerating the cell to reduce thermionic emission.

diffused into the tungsten. However, extended heating in vacuum at a very high temperature decreased the weight, until, within the experimental error, it became the same as in the beginning. A chemical analysis of the condensed metal film was made to test whether or not tungsten is evaporated. The analysis gave no definite indication of tungsten. A concentration of 0.03 per cent by weight was



detectable. The tungsten was almost completely pre-
evaporation proceeds. A
back in exactly the same p-
measure for the decrease.

The arrangement used is
the California Institute of
and 12. It is in the form of
30-mil tungsten wire, 1/4 of



based on vacuum tubes of fifty years ago rather than on transistors.

Build vacuum thermopiles that measure infrared, visible light and ultra-violet so accurately that they can be used to calibrate photographic lightmeters and such. You've heard of carbon arc lights, but do you know how to build iron arc lights? Or low pressure mercury arc lights? And others? You can even build a machine to measure the wavelength of colored light.

You'll find details on hydrogen furnaces, crucibles, burners, electric arc furnaces, and even a lab setup for making artificial rubies and sapphires! And there's much more - even down to what we consider the "easy stuff" like using a lathe and sand casting.

You should see by now that this is a fantastic book loaded with construction secrets for unusual equipment. And you should now understand how a book first

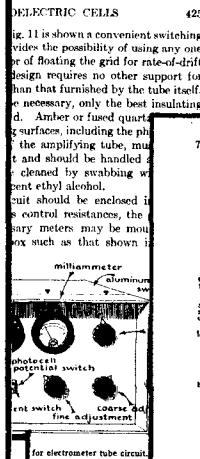


Fig. 11 is shown a convenient switching
vides the possibility of using any one
of floating the grid for rate-of-drift
design requires no other support for
than that furnished by the tube itself.
necessary, only the best insulating
d. Amber or fused quartz
surfaces, including the ph
the amplifying tube, mu
and should be handled a
cleaned by scrubbing w
gent ethyl alcohol.
cuit should be enclosed i
control resistances, the
ary meters may be mou
such as that shown i

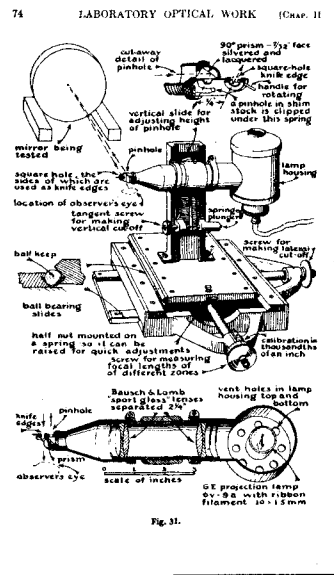
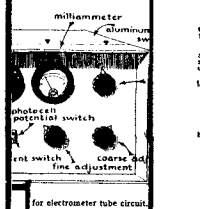


Fig. 31.

published in 1938 went through a couple of dozen printings! It's a classic. It's incredible. You should have a copy for reference if nothing else. Highly recommended. Order a copy today.

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The Strange Books of Charles Fort

Four Mysterious Books in One!

The Complete Books of
CHARLES FORT
by Charles Fort

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"Did beings from outer space visit earth in the past... are the various objects seen in the sky (flying saucers, in modern terminology) evidences of their visits?"

"What is the explanation of falls of frogs, falls of fishes, falls of seashells, which have been recorded from time to time? Are they explainable in terms of selective tomadoes, or are they evidences of a planetary mechanism that we do not know?"

"How can we answer reports of strange animals, disappearances of men from open sight, curious structures in the snow, talents like teleportation and telekinesis?"

"These are the 'damned,' by which the late Charles Fort meant all the wide range of mysteries that are ignored by orthodox science or explained away improperly."

"Charles Fort worked full time for twenty-seven years at the British Museum and the New York Public Library researching scientific journals, old periodicals, newspapers, and manuscript accounts to gather material on phenomena from the borderlands between science and fantasy. His researches appeared in four books, *The Book of the Damned* [1919], *New Lands* [1923], *Lo!* [1931], and *Wild Talents* [1932]."

"In these four volumes Fort gathered together, organized and commented on a wild host of phenomena: flying saucers seen in the sky before the invention of aircraft, flying wheels, strange noises in the sky; correlations between volcanic activity and atmospheric phenomena; falls of red snow; falls of frogs, fishes, worms, shells, jellies; finding of 'thunderbolts'; discrepancies in the schedules of comets, sightings on Mars and the moon; infra-Mercurian planets; inexplicable footprints in snowfields; flat earth phenomena, disruptions of gravity; poltergeist phenomena; stigmata; surviving fossil animals; the Jersey devil; Kaspar Hauser;

Frogs & Fishes Falling from the sky!

Flying Saucers in Victorian days!

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Mysterious Planets!

Unusual gravity!

Poltergeists!

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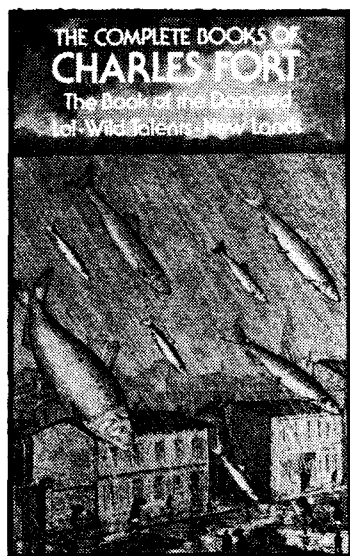
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spontaneous combustion....

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In this three-inch-thick hardcover book you'll find more details on more strange, unexplained events than you'll find anywhere else. It's an incredible collection that should be part of any library on fringe science. If you specialize in the gray area at the outer edge of science, you must have a copy of this. Recommended.

No illustrations, but there is a complete and detailed index.

5 1/2 x 8 1/2 hardcover 1126 pages

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UNUSUAL PROJECTS!

MECHANICS NOTE-BOOK 20

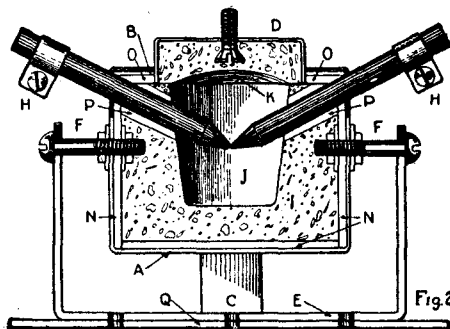
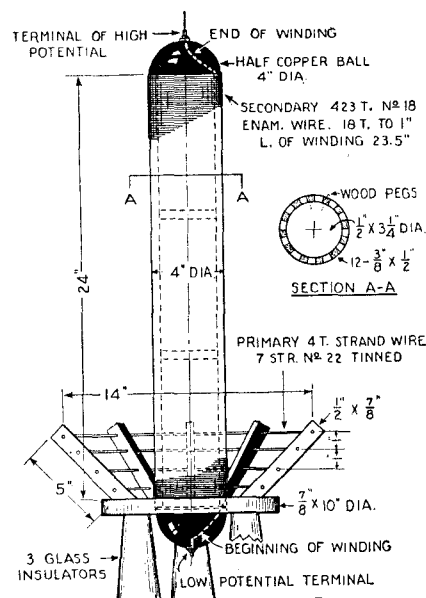
Old Magazine Plans reprinted by Lindsay Publications

Just after the first world war, unusual, often downright strange magazines appeared on the market to take care of the public's hunger for news on inventions and scientific experiments.

After years of searching and many dollars expended, we managed to accumulate a couple of dozen copies of various magazines such as "Everyday Engineering Magazine", "Electrical Experimenter", "Practical Electrics" and "Science and Invention".

Although most of the articles are ridiculously funny because of their inaccurate theory, wrong conclusions, or prediction of bizarre future inventions, there are a few really inter-

esting construction articles that are still useful today. In this over-size notebook you get the winners.



grinder having a 6"x6" table.

You get plans for a universal lathe attachment that the author claims is good for surface grinding, indexing, shaping, planing and milling. Build yourself a one-lung one horsepower overhead valve gas engine from scratch.

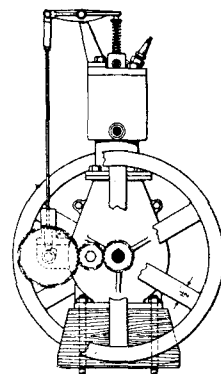
And you get plans for a 24" Tesla coil, parts of which have been reprinted many times over the years, including in our own "Tesla Coil Secrets". Here, you get every word and every drawing. Nothing has been left out.

We can't tell how many of these plans were actually built and proven. At the very least, they'll give you many new ideas. This is detailed how-to from magazines published from September 1918 to February 1926.

It has been long, difficult, and expensive process to accumulate this information. And although you may never get your hands on the originals, at least you can get the plans they contained. Any builder will find this fascinating reading. Get a copy. 8 1/2 x 11 booklet 22 pages

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AUTOPOWER

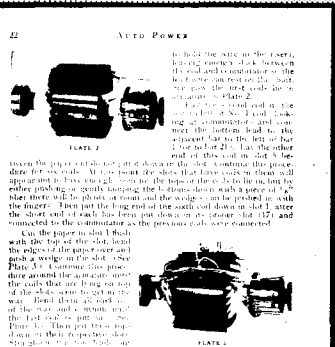
Classic 1935 text on automobile generator conversions & modifications!

AUTOPOWER — Automobile Generator Conversions and Modifications
by S. W. Duncan
reprinted by Lindsay Publications

From out of the Great Depression comes this unusual book on ways to make auto generators produce unusual amounts of power. The major problem with this book is that the generators being rewound are no longer available. Even if you were to find one of the units listed it would now be a hard-to-find part for an antique car. If you were to rewind one of these antique generators, I'd personally drive over and "smack you up 'long side the head!"

If that's the case, then why would I reprint something like this? Simple. The principles taught here can be applied to modern generators, DC motors, starter motors and more. You get detailed, practical how-to that can be adapted to modern needs. In other words, this is raw material for your brain. I can't guarantee your success, but I can guarantee that the info you find here is rare, and that you'll get your money's worth.

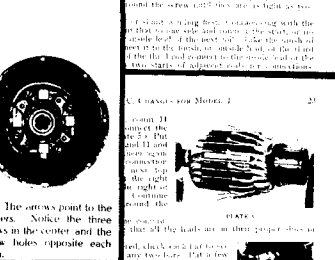
Chapters include changing a Ford Model A generator to a 110 volt alternator, get constant voltage at variable speed, converting a Dodge 12 volt generator into a 110 volt 500 watt alternator, changing a model T to 110 volt AC, making field and armature coils, changing a Delco generator to 110 Volt AC, the winding of automobile armatures, characteristics of DC generators, suggestions on mechanical construction of generators, figuring a new winding for an old frame, converting a farm light plant to 110 volt



GYROSCOPIC MONORAIL RAILWAY. 147

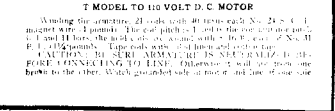
them by hammering them on what is intended to be their concave side. The end holes to take the screws or nuts which attach them to the framework should be a rather loose fit to permit delicate final adjustment by tapping before the screw or nut is tightened up hard.

The Framework.—The wooden framework shown in plan in Fig. 41, a, and in elevation in Fig. 41, b, next demands attention. Poplar or American whitewood is a very suitable wood, being light, free from knots, and easy to work. The actual manner in which the framework is constructed is immaterial, so long as the leading dimensions are retained and the frame is



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pieces as used, longer, and not antiseptic, brass or wire be line of all the



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AC, and a chapter of definitions. This is a heavily illustrated volume, wall-to-wall how-to. Get a copy of this. It's great even if it is old. This is one of those manuals that people talk about having seen years ago, but can no longer find. It's worth having a copy just for reference. Order a copy today. 5 1/2 x 8 1/2 paperback 56 pages Cat. no. 4791 \$4.95

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Great collection of old-time projects! ...from steam power to radio!

HOME MECHANICS
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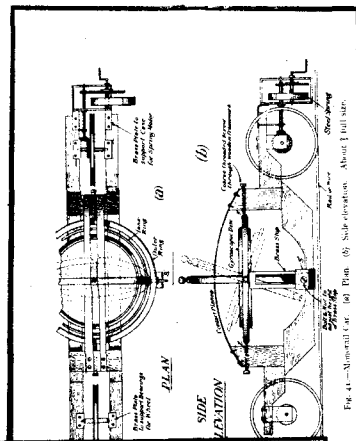
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Nineteen chapters with 214 illustrations will show you how to build a workbench, an astronomical telescope, a heliograph for signalling, a model steam turbine, an electrical resistance box, a home-made galvanometer (electrical meter), a Wheatstone bridge (electrical test equipment), a simple electric motor, a model railway electric signal, a pneumatic sprayer, a force pump for liquids, a windmill for pumping, model aeroplanes, a model gyroscopic railway, an X-ray machine powered by a Whimshurst machine, a kaleidoscope, and more.

Learn about fretwork, overlaying in wood, metals, xylonite, and more. You'll even learn how to build a spark-gap wireless transmitter which would probably get you put in jail if you were to really put it on the air!

You'll find the models are generally not all that complex, yet they really work. Even if you don't build the models exactly as described, you'll at least get great ideas adaptable to other uses.

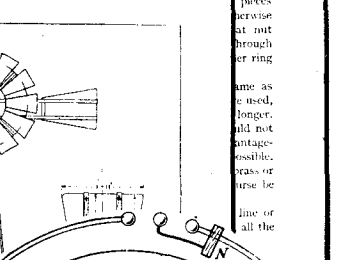
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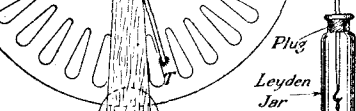
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AC, and a chapter of definitions. This is a heavily illustrated volume, wall-to-wall how-to. Get a copy of this. It's great even if it is old. This is one of those manuals that people talk about having seen years ago, but can no longer find. It's worth having a copy just for reference. Order a copy today. 5 1/2 x 8 1/2 paperback 56 pages Cat. no. 4791 \$4.95

Edison's Incredible Experiments!

Thomas Edison Book of
EASY & INCREDIBLE EXPERIMENTS
by James Cooks & the Edison Foundation
"Activities, Projects, and Science Fun for All
Ages."

You'll enjoy this great book of fun experiments. The fields of electricity, electrochemistry, chemistry, magnetism, phonography, photography and others are covered.

Experiments include how a doorbell circuit works, electricity from a lemon, ink for secret messages, building a carbon transmitter, making a magnet, making an electromagnet, building an electrophorus and an electroscope. Electroplate your house key. Build a phonograph pickup, an "ore-separator" that rejects counterfeit coins, a portable burglar alarm, an electric motor, an electric pencil, a simple battery, a basic radio, a pinhole camera and more! There are even experiments on turning trash into energy, converting sunlight directly into electricity, building a cloud chamber, a geiger counter and more.

A majority of these experiments are easy enough for kids to build and enjoy, and even enter in science fairs. Yet, they're educational enough that adults can learn a great deal (and have as much fun as a kid in the process)!

This a great book of experiments. Get a copy! 8 1/2 x 11 paperback 146 pages
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46

"A Watchdog That Never Sleeps." The system should work like a charm! Anyone opening a door that is heavily trapped with this alarm will be in for quite a bit of trouble. Keep in mind, too, that this burglar alarm is truly portable. Since it has its own power supply, you can take it on family trips for use in hotels, motels or major trailers. Maybe everyone will sleep with more peace of mind.

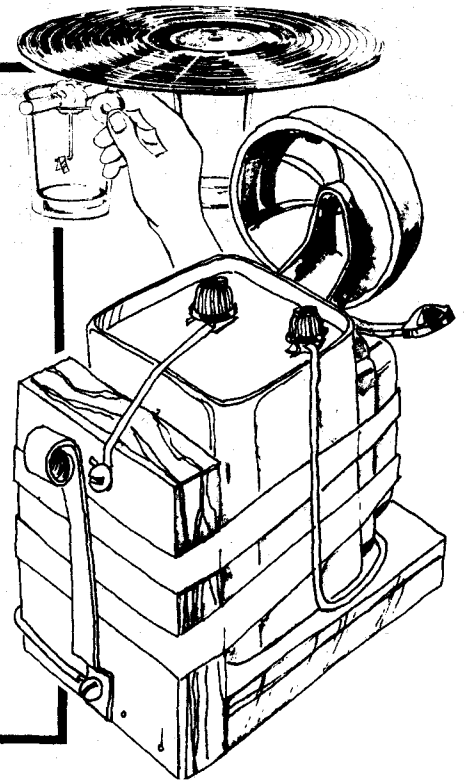
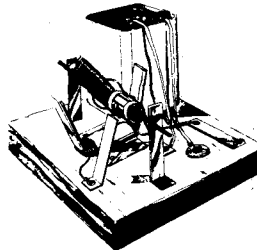
EDISON'S POWER-GENERATING SYSTEM

As we said earlier, Thomas Edison knew that when he eventually reached his goal, the electric light wouldn't be of much use by itself. An entire central system for generating electricity and distributing it to homes would be needed. To Edison goes the credit for masterminding and building this system.

To make such a system a reality, Edison had to invent practically everything in it: underground distribution, many insulating materials, power switches, meters, dynamos, lighting fixtures, fuses, and more. Certainly all of these inventions played an important role in the success of the system. But among the most vital was the world's first economical direct-current (DC) generator or dynamo. This brings us to our last project in this section. The big one. It's a DC motor, which is essentially the same thing as a DC generator.

EXPERIMENT 10: A Simple Electric Motor

THINGS NEEDED: Strip on 6 by 5 by 3 1/2 by 1 1/2 of #24 magnet wire. Ten 16-gauge spikes. Tape 1/2 wide. Darning needle or piece of coat hanger. Various metal strips. Copper-strap lamp wire 2 long. Base board 7 by 6 by 1/4. 4 screws. Some nails. 1 hook-up wire. 6-volt battery. Vine.



ELECTRICITY & ELECTRONICS!

ELECTRICITY AND ELECTRONICS

by Gerrish & Dugger

Are you looking for a great introductory text on electronics? Then check out this great technical school textbook! It's loaded with illustrations and easy-to-read text. It's a bit on the expensive side, but it's worth it.

You get chapters on conductors and insulators, sources of electricity, basic circuits, magnetism, generators, instruments, inductance and RL circuits, capacitance in circuits, tuned circuits and RCL networks, electric motors, basic electronic devices, integrated circuits, power supplies, amplifiers and linear integrated circuits, digital circuits, oscillators, radio wave transmission, radio wave receivers, television, computers, and career opportunities.

Sure, there are a lot of electronics texts on the market, but the beauty of this book is its clarity. It is a friendly text that won't scare the pants off beginners and particularly young people just starting out. Take one look, and you'll agree.

If you're an avid reader, you'll notice that the sentences are very short and simple. That implies that this book is written for people who would rather work with their hands than read. And you be sure that the text is easy to understand.

It's not the ultimate electronics text to be sure. No such animal exists, but this comes close. Consider it carefully, either for yourself or as a gift. A good book. 8 1/2 x 11 hardcover 432 pages
Cat. no. 372 \$21.95

Basic Electronic Experiments

Make or a circuit diagram picture. Diagrams and circuit board. This circuit has a radio circuit and two range switch. Fig. 13-14. A project of circuit of circuit. Fig. 13-15. A project of circuit of circuit.

LIGHT-EMITTING DIODES

Light-emitting diodes (LEDs) are special diodes. When connected in the forward bias direction, they emit light. Fig. 13-16. A project of circuit of circuit. Fig. 13-17. A project of circuit of circuit.

A LED circuit is a simple circuit. It consists of a battery, a resistor, and a LED. The circuit is shown in Fig. 13-18. A project of circuit of circuit. Fig. 13-19. A project of circuit of circuit.

Light-emitting diodes (LEDs) are special diodes. When connected in the forward bias direction, they emit light. Fig. 13-16. A project of circuit of circuit. Fig. 13-17. A project of circuit of circuit.

REVIEW QUESTIONS FOR SECTION 13.2

1. What is a diode?
2. What is a light-emitting diode (LED)?
3. What is a circuit diagram?
4. What is a project of circuit of circuit?
5. What is a project of circuit of circuit?
6. What is a project of circuit of circuit?
7. What is a project of circuit of circuit?
8. What is a project of circuit of circuit?
9. What is a project of circuit of circuit?
10. What is a project of circuit of circuit?

THE TRANSFORMER

A transformer is a device that transfers energy from one circuit to another by electromagnetic induction. A transformer consists of two or more coils of wire wound around a common laminated iron core. The primary coil is connected to the AC source. The secondary coil is connected to the load. The transformer is shown in Fig. 13-20. A project of circuit of circuit.

The construction of a simple transformer is shown in Fig. 13-21. A project of circuit of circuit.

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Inductance and RL Circuits

series winding or series winding is called the "SERIES WINDING". The series winding is connected to the AC source. The series winding is shown in Fig. 13-22. A project of circuit of circuit.

The series winding is a device that transfers energy from one circuit to another by electromagnetic induction. A series winding consists of two or more coils of wire wound around a common laminated iron core. The primary coil is connected to the AC source. The secondary coil is connected to the load. The series winding is shown in Fig. 13-20. A project of circuit of circuit.

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ELECTRICAL DESIGNS!

ELECTRICAL DESIGNS

Articles from American Electrician Magazine
reprinted by Lindsay Publications

By 1901 people were getting tired of shocking the cat. They realized that electricity was more than a novelty, and that it could be put to use doing heavy work. But electric motors were scarce and very expensive. It's no wonder that half of the pages in this book are devoted to building and winding motors.

As interesting and useful as motor plans are to some people, the beauty of this volume are the plans in the back half. You'll learn how to build rheostats, reactive coils, ammeters, voltmeters, a simple wattmeter, and a galvanometer.

Build a storage battery, a Bunsen photometer to measure the candlepower of light bulbs, an arc lamp, and a Nemst lamp. Build a telephone, a dry cell, and handy tools for working on motor commutators.

If you're into high voltage, you'll find useful plans for an induction coil, a Tesla-Thompson coil, a high voltage condenser for use with Tesla coils, and a powerful Wimshurst machine.

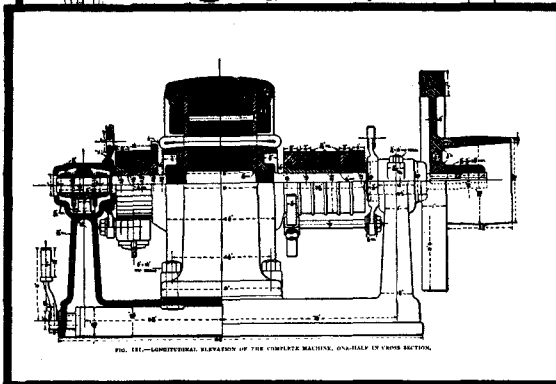
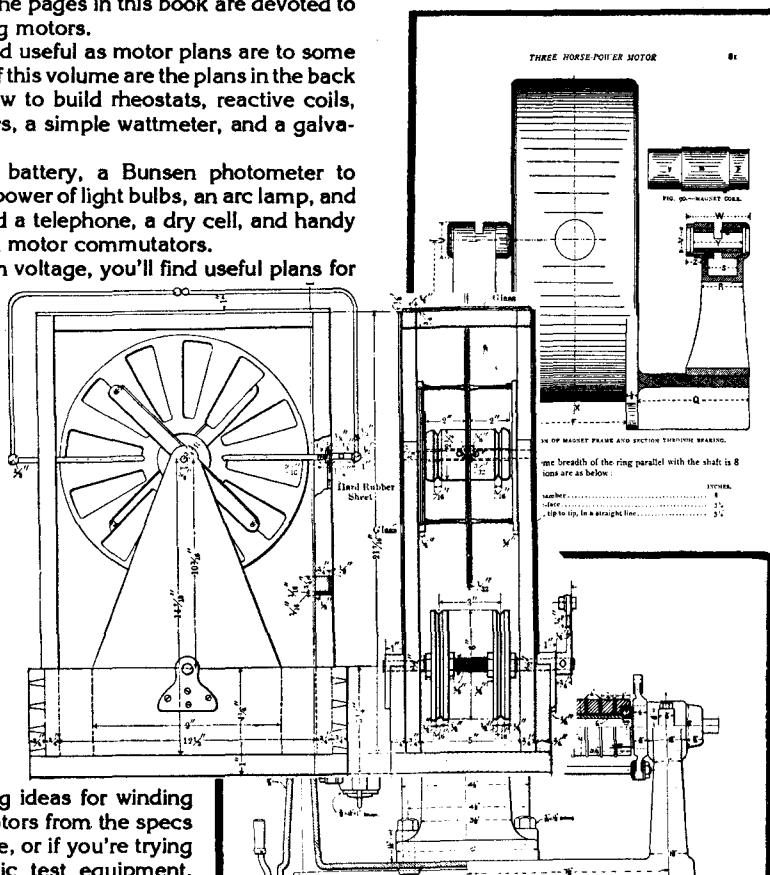
Every article is illustrated, and most drawings are dimensioned. The text is brief and to the point, but it should provide more than enough information for you to complete the project.

It doesn't matter whether you're interested in collecting ideas for winding modern working motors from the specs and instructions here, or if you're trying to build early exotic test equipment. You'll find something here to interest you.

With plenty of hard work you could probably build an entire electrical system: alternator, transformer, motors, rectifier, storage battery, lamps, telephone without having to buy any commercial parts other than wire! Think about it. Your friends would call you a modern day Thomas Edison!

Great ideas. Unusual plans. Plenty to keep your mind and hands busy. Get a copy of this! It's worth having! Order today. 5 1/2 x 11 paperback 262 pages Cat. no. 4228 \$11.50

34 Projects! From motors to Tesla Coils!



You Get Plans for:

- one-sixth horsepower motor with drum armature
- one-sixth horsepower motor with ring armature
- one-fourth horsepower motor with drum armature
- one-fourth horsepower motor with ring armature
- one-half horsepower motor with drum armature
- one horsepower bipolar motor with drum armature
- one horsepower four polar motor with drum armature
- two horsepower four polar motor with drum armature
- three horsepower motor with drum armature
- one kilowatt combined AC & DC machine
- two kilowatt combined AC & DC machine
- four kilowatt combined AC & DC machine
- single phase rectifier
- universal alternator for laboratory purposes
- one-quarter horsepower induction motor
- simple transformer in four sizes
- construction of a reactive coil
- construction and calculation of rheostats
- simple voltmeters, ammeters, wattmeters
- d'Arsonval galvanometer
- sensitive mirror galvanometer
- Thomson Astatic Galvanometer
- cheap testing set
- construction and use of a photometer
- construction of a simple storage battery
- construction of a constant potential arc lamp
- an experimental Nemst lamp
- construction of an induction coil
- construction of a Tesla-Thompson high frequency coil
- condenser for extremely high potentials
- construction of a Wimshurst influence machine
- telephone transmitter and receiver
- construction of a dry battery cell
- some handy commutator tool

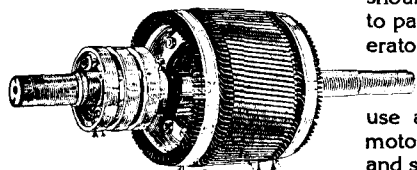
ARMATURE WINDING and Motor Repair!

ARMATURE WINDING AND MOTOR REPAIR

by Daniel H. Braymer

From 1920 comes this motor rewinding book loaded with drawings and photographs that will show you how to build both AC and DC machines.

Chapters include: DC machines, AC machines, shop methods of rewinding DC armatures, making commutator connections, testing DC armature windings, operations before and after winding DC armatures, insulating coils and slots for winding, shop methods for rewinding AC machines, testing induction motor windings for mistakes and faults, adapting DC motors to changed operating conditions, practical ways for reconnecting induction motors, commutator repairs, adjusting brushes and correcting brush troubles, inspection and repair of motor starters and gen-

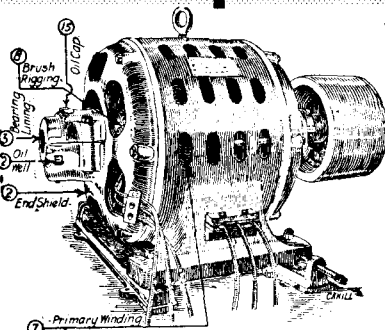


erators, diagnosis of troubles, methods to solve special troubles, tables and more.

One special chapter at the back will show you how to build the special tools and jigs, an armature sling, a pinion puller, coil winding machine, a coil taping machine, commutator slotter, armature banding machine and more.

The motors described are large types used in factories. But the principles apply to the smaller motors you and I use. You'll learn how to reconnect induction motors for different voltages and phases, how to operate a DC motor as a generator and visa-versa, change the DC motor windings for different voltages, and more.

You'll be taught all the tech-

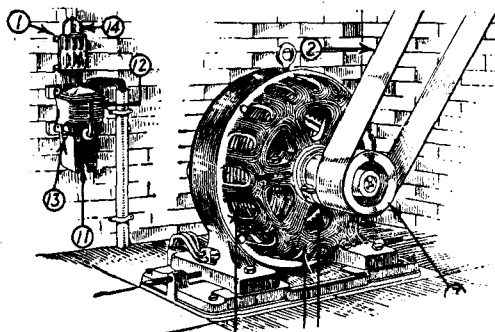


Classic 1920 Text!

niques from removing old windings and cleaning slots, to winding the coils, insulating the end connections, inserting the coils, painting the windings, relining split bearings, and much more. You get data on all types of wave and lap windings, varnishing and insulating materials, and much more.

I make you no promises, but this is the logical place to start should you want to rewind a motor to particular voltage, wind a generator or alternator for use with a windmill or waterwheel, re-winding a big generator for use as a welder, modify a DC motor for use in an electric car, and so on.

This is a beautiful book. You get over 500 pages of clearly written, wall-to-wall practical how-to with excellent illustrations. This is as good as, and in most cases, is much better than, any motor book



I've carried in the past, regardless of price. It's a gem that should be in the reference library of most "machine freaks" (that includes you, son). Order one as soon as you can. 5 1/2 x 8 1/2 paperback 540 pages

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ALTERNATOR SECRETS

If you know the secrets of modification, you can get large amounts of power from a common auto alternator. You can build a portable powerplant driven by a gasoline engine to run brush-type power tools, lights, and AC-DC appliances at remote locations. You can hot-charge storage batteries, or even do light arc welding. Operation of the regulator is explained so that you can build a custom regulator, if needed, to provide regulated output voltages other than 12.

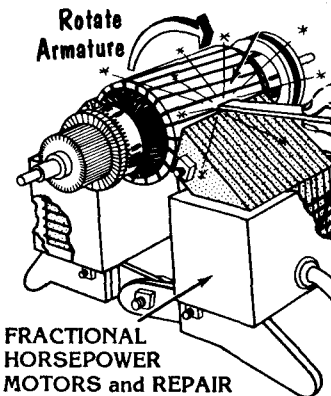
Learn how you can make almost an ordinary induction motor (like an old washing machine motor) put out 120 volts at 60 cycles without rewinding or internal rewiring. These secrets are worth the price of the booklet alone.

We've jammed a ton of information into 16 pages with small type to keep printing costs down so that we can keep the retail price the same as the old edition. Valuable, rare info! Get a copy. 5 1/2 x 8 1/2 booklet 16 pages

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SMALL MOTORS & Their Repair

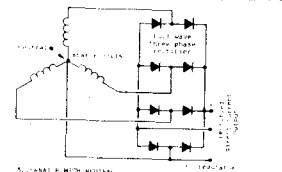


**FRACTIONAL
HORSEPOWER
MOTORS and REPAIR**
by Gerald Schweitzer

When one of your shop motors fails, chances are this book can show you how to fix it. Fractional HP is loaded with top-rate illustrations, exploded views, wiring diagrams of the windings, starters, and protection devices found on almost all small motors.

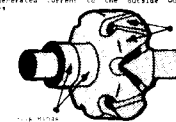
You'll learn about induction motors, split-phase, capacitor, repulsion, shaded-pole, universal, and three-phase motors. Learn about testing, maintenance, control and protective devices. Covers simple repairs, but not rewinding proce-

Power from Alternators!



Alternator Secrets

4. The last two defects alternators have exhibited are in motor vehicles. The reasons are many but output is reduced 20 percent at lower rpm. Voltage can be more or less adjusted with solid state regulators. Alternators require maintenance, and they cost less to manufacture when modified. Auto alternators can provide variable line voltage at 12 to 120 volts for battery charging. No charcoal light arc welding. or for running A/C appliances and lights. Another simple modification provides AC power to run some transformer operated appliances. If you know the load, you can design an alternator that can become a versatile power plant.



Because computer segments must be electrically initiated from one another, they cannot be fabricated from a single block of metal. Each computer segment must be individually attached to the armature by a source of mechanical weakness. When the armature is rotated at high RPM, the forces from the rotation of the computer to explode, throwing segments in all directions.

To prevent explosions, the generator is usually driven at less than one revolution per minute (RPM) for safety. The generator must be operated to a maximum 2500 RPM for safety.

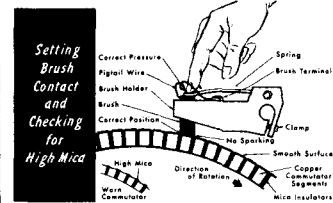
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MOTOR TESTING

Testing Capacitor-Start and Run and Regulation Motors

Capacitor start-and-run motors can be checked similarly to split-phase and capacitor motors. In addition, this motor contains a two-position switch which must also be checked if the motor runs only when hand-started. When this is the case, check the end play of the shaft. If excessive, it may mean that the contacts of the two-position switch are not getting current. To



overcome this, add sufficient washers on the end of the shaft to eliminate the offending end play; recheck the motor to see if it starts unaided. If not, replace the switch entirely.

In general, repulsion motors have the same mechanical faults that occur in split-phase motors. However, repulsion motors develop various electrical faults which do not appear in the split-phase type.

If the repulsion motor fails to start, the brushes, the commutator, or both may be at fault. First, the motor may not be making proper contact with the commutator. In this case, be sure the brushes are pushed down in their holders and the spring tension is sufficient to hold them there. In the second instance, high mica may be holding a brush or brushes away from the commutator, in which case, the commutator must be undercut as described in the section on the care and maintenance of commutators. A third, or the most likely, reason for starting may be a wrong line connection. This may be easily checked and rectified. For more information on repulsion-motor line connections in the section covering repulsion motors.

50

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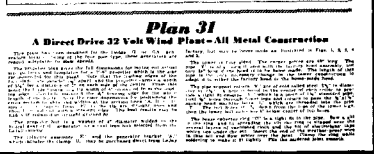
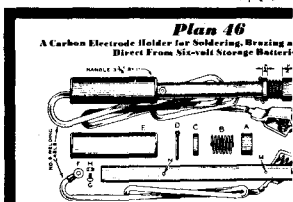
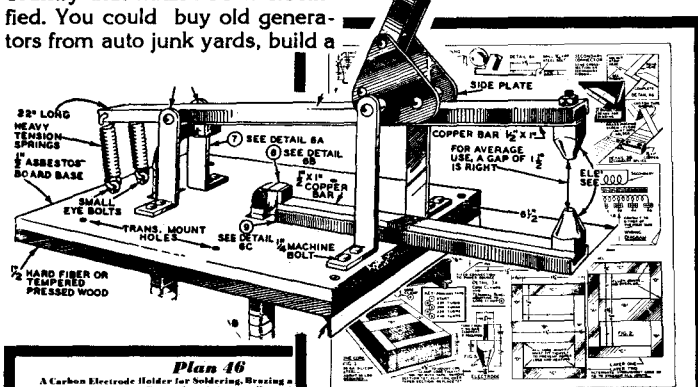
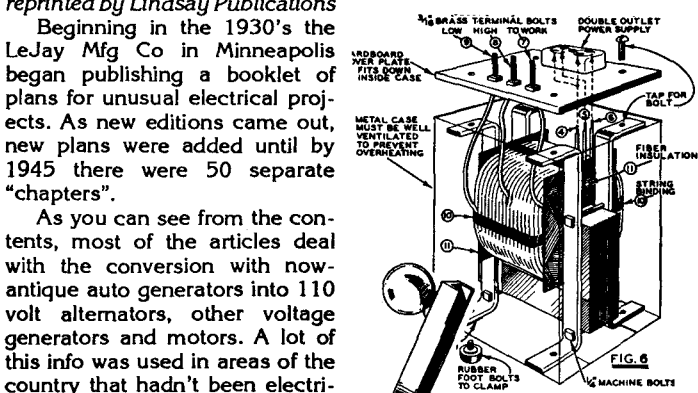
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LeJay Manual

LeJay Manual - 1945 Edition
by Lawrence D. Leach
reprinted by Lindsay Publications

Beginning in the 1930's the LeJay Mfg Co in Minneapolis began publishing a booklet of plans for unusual electrical projects. As new editions came out, new plans were added until by 1945 there were 50 separate "chapters".

As you can see from the contents, most of the articles deal with the conversion with now antique auto generators into 110 volt alternators, other voltage generators and motors. A lot of this info was used in areas of the country that hadn't been electrified. You could buy old generators from auto junk yards, build a



worth the entire price of the publication. For instance, you can build a small but useful spot welder powered by nothing more than a string of auto batteries. You get plans for an arc welder, a transformer spot welder, a carbon-arc torch, electric bicycle, a water wheel, windmills and more. And they're all well illustrated.

This is a manual worth having in your reference library. You may not be able to use all of the information, but you'll get so many ideas even from those chapters you can't use, that you'll find this manual to be worth many times its retail price.

Great ideas. Fun to read. Useful projects. Worth having. Order a copy! 8 1/2 x 11 booklet 32 pages
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Contents

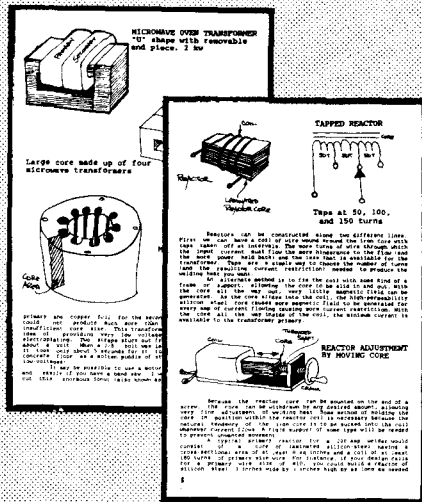
- 1 Plans for 110 Volt AC Light Plant made from Ford Model "T" Generator
- 2 200 Watt AC Generator for Automobile Made from Ford Model "A" Powerhouse
- 3 A 6 Volt Slow Speed Generator (with plans for all-metal windmill)
- 4 6 Volt & 12 Volt Slow Speed Generators from Dodge "G" or "GA" Northeast Generator also from other Generators
- 5 A 32 Volt slow speed wind light Plant Generator
- 6 One 32 Volt Motor, One 110 Volt Motor, One 32 Volt Generator, One 110 Volt Generator from Dodge Generator
- 7 How to Make a Grinder, Series Motor, Constant Speed Motor, A Universal AC or DC Motor and a Soldering Iron
- 8 A 75 to 110 Ampere Arc Welder Made from Dodge "G" or "GA" Generator. Also Dual Welders.
- 9 Pendulum Type Fence Controller made from Ford "T" Coil
- 10 Plans for Building a Complete Wind Light Plant Including Tower, Propeller and Generator Charger
- 11 A 110 Volt AC Light Plant Generator
- 12 A "B" Eliminator For Your Battery Operated Radio
- 13 An Automobile Generator Booster Control
- 14 A 6 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator
- 15 A 32 Volt Constant Speed Generator made from Ford "T" Generator
- 16 A 2 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator
- 17 How to Convert A 6 Volt Cut-Out for 2 Volt Operation
- 18 Directions for Repairing Your Own Batteries
- 19 A Water Wheel Made from Old Automobile Wheel
- 20 An Electric Outboard Motor from Old Ford "T" Generator
- 21 A Gas Engine or Motor Driven Generator with Drawings in Detail
- 22 An Armature Growler for Testing Auto or Slow Speed Armatures
- 23 Two 32 Volt Series Motors from Dodge "G" or "GA" Generator
- 24 A 32 Volt Heavy Duty Motor made from Dodge "G" or "GA" Generator
- 25 A Bench or Breast Drill for 6, 12, or 32 Volts from "T" Generator
- 26 A 6 Volt Motor for Drill Press, Washing Machines, etc. made from Model "T" Generator
- 27 One 12 volt Motor and One 32 volt Motor Made from Model "T" Generator
- 28 Two 6 Volt Generators from the Dodge, also general information
- 29 A 110 V. or 220 VAC Portable Transformer for Arc Welding
- 30 A 110 Volt Spot Welder — 1 Kw. Input Normal Draw 10 to 11 Amps
- 31 A Direct Drive 32 Volt Wind Plant — All Metal Construction
- 32 A Battery Spot Welder
- 33 Armature Diagrams for Autolite, Bosch-Autolite and Bosch Generators
- 34 Armature Diagrams for Delco, Delco-Remy, & Remy Generators
- 35 Armature Diagrams for Ford A, B and V8 Generators
- 36 Armature Diagrams for Northeast Generators
- 37,38 Armature Diagrams for Atwater-Kent & Dyneto Generators
- 39 Armature Diagrams for Leece-Neville Generators
- 40 Armature Diagrams for Wagner Generators
- 41 Armature Diagrams for Westinghouse Generators
- 42 Plans for Installing Lights on Your Tractor
- 43 Two Types 110 Volt AC Insect Exterminators
- 44 An Electric Scooter Using a 6 or 12 volt Battery for Power
- 45 An Electric "Go Bike" Using a 6 or 12 volt Battery for Power
- 46 A Carbon Electrode Holder for Soldering, Brazing and Light Welding Direct from Six-volt Storage Batteries
- 47 Ball Type Fence Controller Made from Ford "T" Coil
- 48 110 Volt AC 500 Watt Self Excited Generator from Dodge Model "G" or "GA" generator
- 49 110 Volt AC 60 Cycle 1/2 HP Synchronous Motor from Dodge Model "G" or "GA" Generator
- 50 An AC Welding Transformer Using Dodge Generator Coils
- Appendix Windpower Information, Definitions, etc.

windmill, repair old auto batteries, use the electricity generated to power homebuilt motors, welders and so on.

Most of the information in this booklet is now of limited value simply because you can't get the generators listed. But rewinding data, hints and tips provided can help you in other rewinding projects for other types of generators.

There ARE several projects in this booklet any one of which is

Build A Powerful Welder!



How to Design and BUILD A 200 AMP WELDER

You can find many different welders on the market, so why even consider building one? Maybe you can save money. Perhaps you need something bigger than 200 amps and want to scale up a standard design. Of course, there's always the pride of being able to say you built it yourself. Or perhaps you would just like to know how they work.

Here's a publication for the mechanic (the non-electrician) — an introduction to transformer welders. You'll learn how transformers work, what is and is not important in the design of a welder transformer, how current is controlled, how an AC to DC rectifier bank is built, and more. You can design welders for 100, 200 or more amps using the principles revealed here.

You will NOT get complicated theory. You get information that has been learned by study and by doing, rather than from designing transformers as a profession. You'll learn the unique aspects of controlling heavy welder currents. This is information generally available nowhere else. After reading and studying this manual, you'll probably want to refer to other books which cover heavy transformer design theory, details on silicon steel, wire types, design problems and much more.

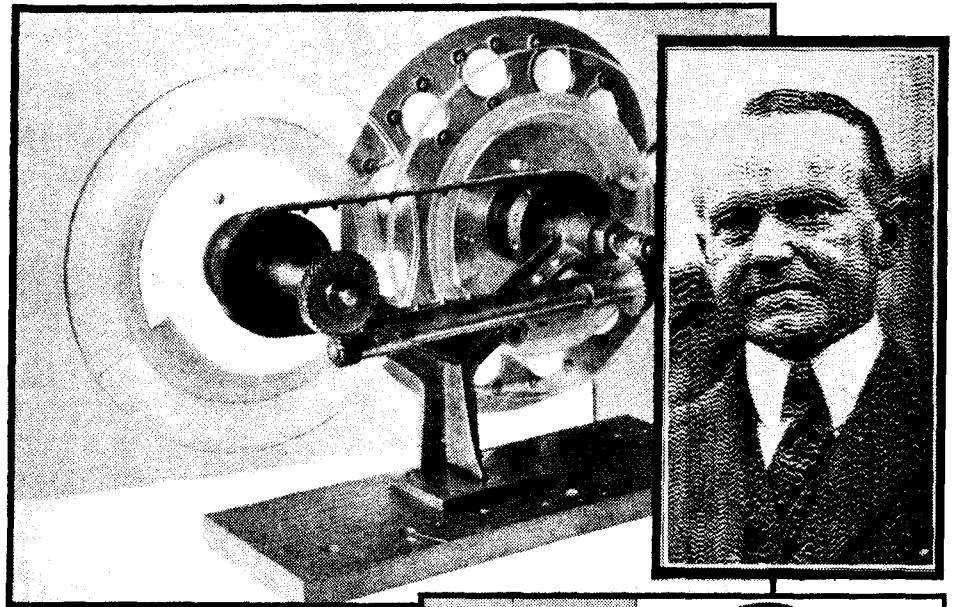
You can build a single transformer that can kick out heavy currents for welding, thawing pipes, AND, when used with a bridge rectifier, can be used to charge batteries, electroplate and more.

Get a copy of this hot little manual. You'll find that it is very clearly written and easy-to-read. This is the FIRST book you should consider before building or even possibly repairing a transformer welder. Order a copy today. 5 1/2 x 8 1/2 30 pages.

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Early FAX & TV Equipment! Rare!



Vision by Radio!

VISION BY RADIO

Radio Photographs, Radio Photograms
by C. Francis Jenkins

Go back to 1925 and discover the latest devices developed to transmit photographs, in other words, the earliest fax machines and the earliest televisions!

This is an amazing book! You get details on the electrical components that existed at the time, the tests that had been tried, correspondence from famous people, and historical notes.

The most interesting section, I think, is illustrated review of existing machines: Nipkow & Sutton, the Amstutz system, the Electrograph, the Baker machine, the Dr. Korn Machine, the Rignoux and Fournier Scheme, the Belin machine, the AT&T machine, RCA's machine, the Braun Tube receiver, pictures by radio in natural colors (!), prismatic disc machines, the Jenkins prismatic ring, Jenkins synchronizing forks, Jenkins picture-strip machine, Jen-

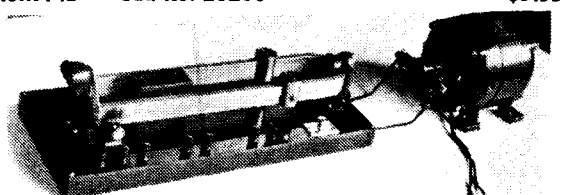
kins Duplex machine, talking machine photograms, radio vision (television), Jenkins high speed camera, and more.

Obviously, this book was written and published to glorify Jenkins and Jenkins Laboratories Inc (no doubt so he could make more money). But it delivers more photos, drawings, and patents on early fax and TV equipment than I've ever seen anywhere before.

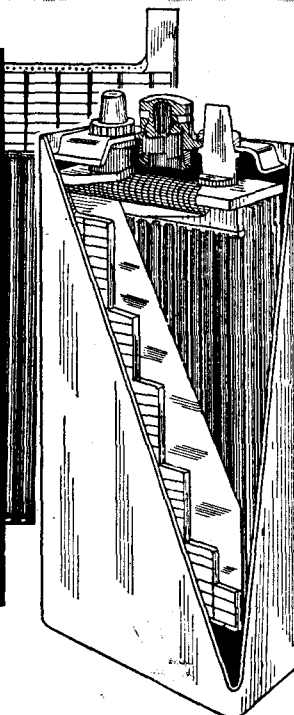
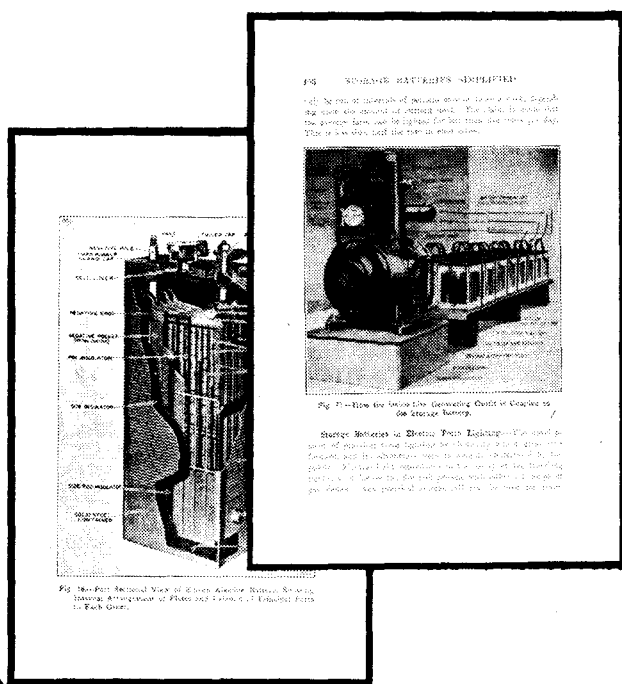
It's really good, and the price we ask is a mere fraction of what you'd pay for an original if you could find one. Rare information! Excellent book. Get a copy! 5 1/2 x 8 1/2 paperback 140 pages

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Storage Batteries Simplified!



STORAGE BATTERIES SIMPLIFIED by Victor Page reprinted by Lindsay Publications

It's old, 1917 to be exact, but it's darned good. Modern storage batteries have plastic cases and plate separators, but in operation, performance, and maintenance batteries really haven't changed too much since this book was first published.

Five chapters cover simple lead plate batteries, Plante plates, pasted plates, Edison batteries, details of plate construction, Gould plates, Exide plates, separator function and more. One whole chapter deals with battery defects, how to make electrolyte, dismantling and repairing batteries. You get full details on how to charge batteries, plus a chapter on their use covering auto starting and lighting, electric autos, railroad use, street cars, mines and even WWI submarines!

I don't think the battery repair instructions will be very useful with modern batteries, and I wouldn't even try to build some of the battery chargers described. Nevertheless, there is so much excellent material here that I give it high marks. Loaded with photographs, drawings and charts. 5 1/2 x 8 1/2 paperback 220 pages Cat. no. 4473 \$8.95

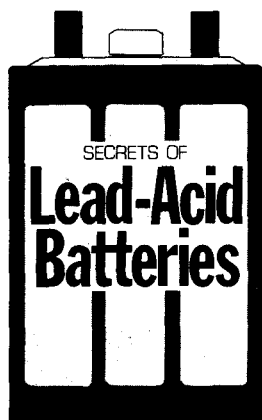
Lead-Acid Batteries & How They Work!

SECRETS OF LEAD-ACID BATTERIES

To get the most out of lead-acid cells whether you used them in your auto, an electric car, an alternate energy system or other application, you should know what's in this jam-packed booklet.

You'll learn how batteries are rated, built, the different types of charging, how they discharge and why they fail. Learn to quick charge, equalize cells, and even perform a "rejuvenation" treatment that helps some "sick" batteries. Testing of used batteries and electric auto applications are also discussed.

This is much more than basic information but without heavy mathematics and chemistry. Get a copy! 5 1/2 x 8 1/2 booklet 44 pages Cat. no. 86



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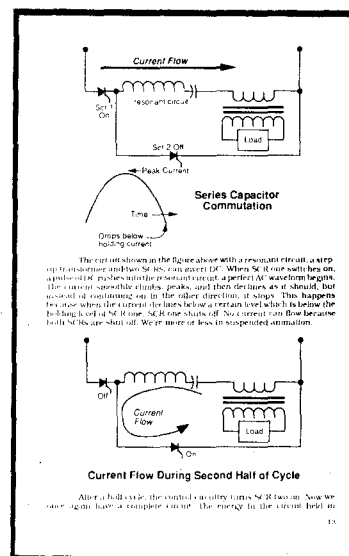
Convert DC into 110 Volt 60 Cycle AC!

POWER INVERTER TECHNOLOGY

You can convert 12 volts DC into 120 volts AC 60 cycle with an electronic inverter. If you're intending to invest in an inverter, there's more to know than just its cost and power rating. Do you know what type of design it is? Can it handle high power factors without blowing the transistors or SCRs? Can it lock to the local power grid?

Learn about these problems and much more in this popular jam-packed technical report. Learn about transistors, SCRs, series and parallel commutation, waveform filters, back current flow, and much more. You'll get reports on several commercial inverters, names and addresses of a variety of manufacturers, and sources for free plans should you want to attempt building an inverter.

Other books on the market are either childishly simple or incredibly complex. This is in between, being a translation into layman's terms of the concepts in complex engineering texts. This is not a how-to text. This is an education. You'll learn how to spend your money wisely and get the most from an inverter. Rare info. Reasonably priced! Get a copy. 5 1/2 x 8 1/2 24 pages 2nd edition Cat. no. 83



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Great Auto Electronics Text!

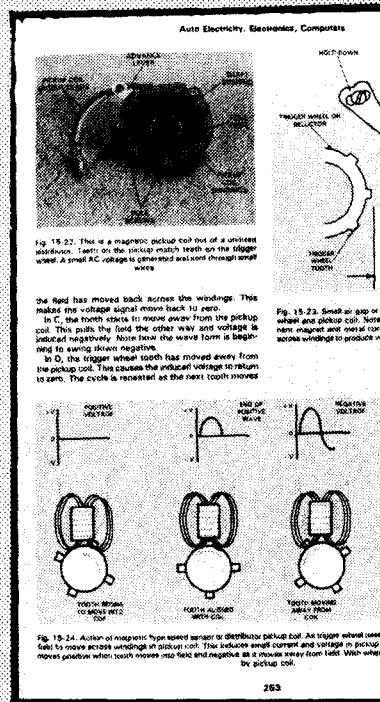


Fig. 15-22. This is a magnetic pickup coil of a universal alternator. Facts on the pickup match teeth on the trigger wheel. A small AC voltage is generated across its terminals.

The field has moved back across the windings. This makes the voltage signal move back to zero. In C, the tooth starts to move away from the pickup coil. This puts the field the other way and voltage is induced negatively. Note how the wave form is beginning to swing down negative. In D, the trigger wheel tooth has moved away from the pickup coil. This causes the induced voltage to return to zero. The cycle is repeated as the next tooth moves.

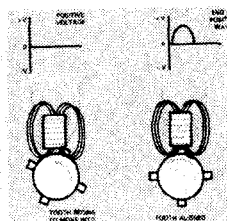


Fig. 15-24. Action of magnetic-type speed sensor or distributor pickup coil. As trigger wheel passes pickup coil, field to move across windings in pickup coil. This induces small current and voltage in pickup coil windings. This voltage is positive when tooth moves into field and negative as it moves away from field. With wheel spinning, AC by pickup coil.

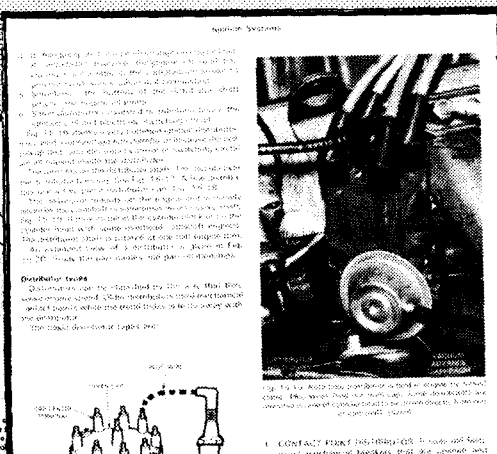


Fig. 15-23. Small set of a universal alternator. The rotor is the main magnet and needs a coil winding to produce a magnetic field.

When the rotor is spun, the coil in it, that has a magnetic field, induces a voltage in the stator winding. This voltage is the AC output of the alternator. The rotor is the main magnet and needs a coil winding to produce a magnetic field. The rotor is the main magnet and needs a coil winding to produce a magnetic field.

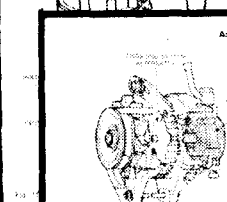


Fig. 15-25. The alternator has a core that separates the rotor and stator. The rotor is the main magnet and needs a coil winding to produce a magnetic field.

The alternator has a core that separates the rotor and stator. The rotor is the main magnet and needs a coil winding to produce a magnetic field. The rotor is the main magnet and needs a coil winding to produce a magnetic field.

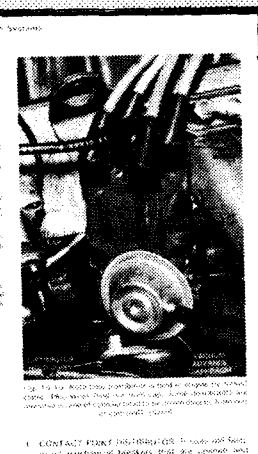


Fig. 15-26. A contact point distributor. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The contact points are the main magnet and need a coil winding to produce a magnetic field. The contact points are the main magnet and need a coil winding to produce a magnetic field.

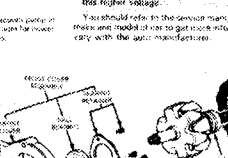


Fig. 15-27. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

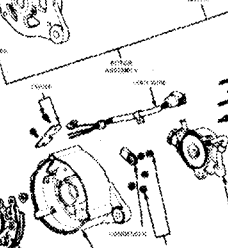


Fig. 15-28. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.



Fig. 15-29. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.



Fig. 15-30. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.



Fig. 15-31. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.



Fig. 15-32. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.



Fig. 15-33. A distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

The distributor with a magnetic pickup coil. The contact points are the main magnet and need a coil winding to produce a magnetic field.

CONTENTS

Introduction to Electrical-Electronic Systems
Electrical Principles
Electrical Circuits, Ohm's Law
Electrical Components
Electronic Principles, Components, Digital Logic
Tools and Test Equipment
Wiring, Wiring Repairs
Using Wiring Diagrams and Manuals
Basic Electrical Tests, Circuit Problems
Review of Safety
Computers, Sensors, Actuators
Batteries
Starting Systems
Charging Systems
Ignition Systems
Fuel and Emission Control System Electronics
Lighting Systems, Instrumentation
Wipe and Horn Systems
Seat, Window, Lock, Mirror, and Sound Systems
Other Electronic Systems
Computer Self-Diagnosis, Scanners, Analyzers
Sensor, Actuator, Computer Service
Battery and Starting System Service
Charging System Diagnosis and Repair
Ignition System Diagnosis and Repair
Lighting System Diagnosis and Repair
Testing and Repairing Other Systems
ASE Electrical System Certification

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